The OIL WEEKLY

10¢ A COPY

Exclusively Devoted To The Production and Transportation of Oil and Gas

February 1, 1929 **Volume 52. No. 7**

IT'S SAFEST
IT'S STRONGEST
IT'S SPEEDIEST
IT'S MOST CONVENIENT

Wilson
2-STEP
Spring-Latch
Casing
Tong

IT'S A WILSON

The Rollover Lever
permits instant
reversal

Succeeding WILSON & WILLARD MFG. CO.
WILSON OIL TOOLS CORP.
OIL TOOLS DIVISION
of
Byron Jackson Pump Co.
2301 E. Vernon Avenue, Los Angeles, California

Factory Representatives:
Tulsa, Okla., 214 East Brady St.
Houston, Texas, 2201 Breckenridge St.
Fort Worth, Texas, 814 Dan Waggoner Bldg.
New York, N. Y., 1245 Graybar Bldg.

CALIFORNIA
Report for 1928
drilling of deep wells
7000 feet or more
TOTAL
71 completions
69 *Bettis* equipped!

B. J. Anti-friction Tool Joints are equipped with Bettis Protectors

"Best bet yet"

Patterson-Ballagh Corporation

Insurance Exchange Bldg., Los Angeles

Texas and Louisiana Distributors:
Bettis Sales Co., 617 Public National Bank Bldg., Houston

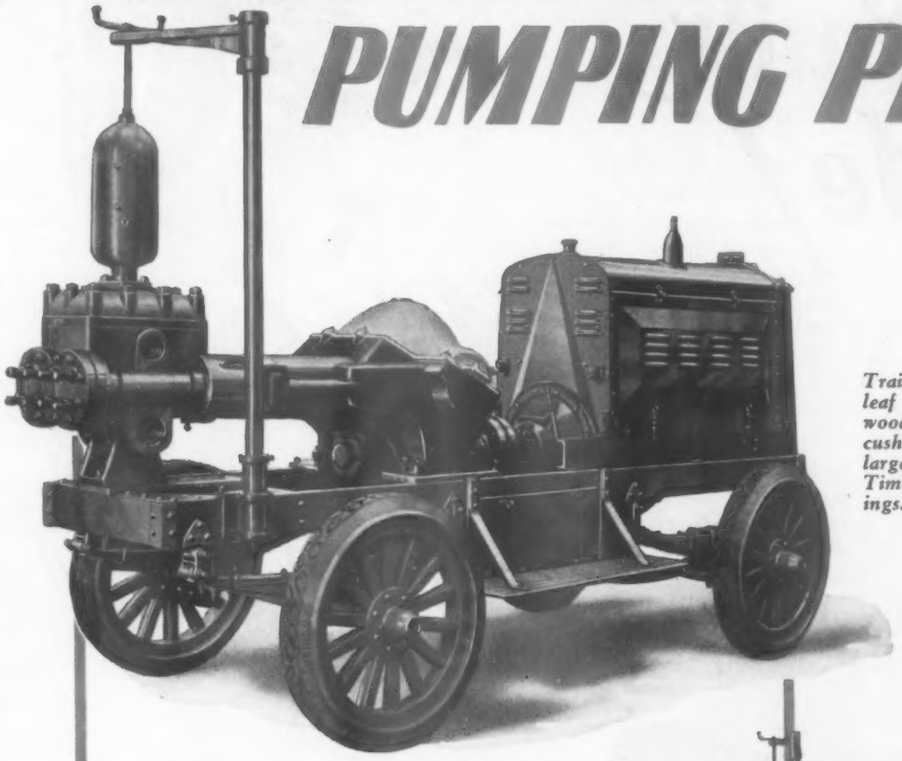
New York Office: 39 Cortlandt St.

Carried in Stock at: Los Angeles, Santa Fe Springs, Ventura, Bakersfield, Long Beach, Tulsa, Houston, New York City

Facts are Facts **Fully Patented**

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1897.

PORTABLE GASO PUMPING PLANTS

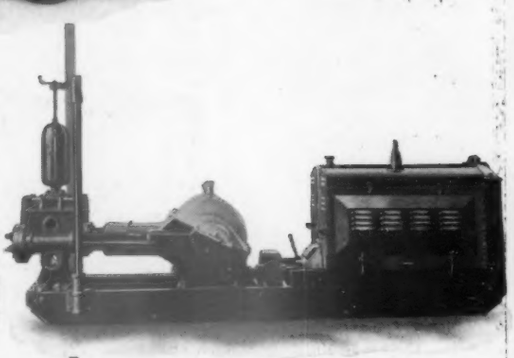


Trailer unit has four 48" 12-leaf Vanadium steel springs, wooden wheels with 36" x 5" cushion rubber tires, running on large Nikrome steel axles with Timken Tapered Roller Bearings. Can be transported at regular truck speed.

Meeting A Real Need—with Equipment of GASO Quality

GASO Portable Pumping Plants are meeting a real need for emergency, temporary and semi-permanent oil field service. They are ideal for water service for drilling operations, pick-up in case of line breaks, mudding or cementing operations, and for any other purpose when general service pumps are needed quickly.

The Pump is a heavily constructed duplex double acting power pump with interchangeable cylinder liners, with capacities ranging from 45 bbls. per hour at 800 lbs. pressure to 250 bbls. per hour at 275 lbs. pressure per square inch. Has bronze ring gear and steel worm, with double thrust ball bearings, enclosed and running in oil. The power unit is a 50 H.P. 4-cylinder Buda engine, with combination gasoline and natural gas carburetor. Ask for full details.



The skidded unit is arranged for easy loading on truck, the channels being heavy and well braced. Holes drilled through each end for running 2" pipe through channels allow hauling around location by truck. Requires no foundation other than wooden sill.

GASO PUMP & BURNER MFG. COMPANY
TULSA, OKLA.
Texas Office: 210 Petroleum Bldg., Fort Worth

GASO PUMPS
for every oil industry need

That's the Truck They Built *for Me!*

"I've driven it over the roughest country, I've been in ditches and mud, and I've had some heavy loads—but my Wichita Oil Field Special sure takes on every job and comes through with flags flying.

"They tell me it's built like a locomotive—but I know it's stronger than that. And it has many advantages that fellows like myself have suggested to the Wichita people, and which make it the *only real* truck for oil field work.

"Take that special steel riveted cab. It saved my life only three weeks ago. Stick to the Wichita Oil Field Special and you'll never go wrong."

Send for our descriptive catalog. The actual photographs it contains authentically illustrate the special construction of this outstanding truck.

The Wichita Oil Field Special!

Built for every use—
to stand every abuse!

The Wichita Falls Motor Company

J. A. KEMP, *President*

WICHITA FALLS, TEXAS

If You Would Be Satisfied With Your Threads—Use LANDIS

The Pittsburgh Pipe and Supply Company whose 6" Landis Pipe Threading and Cutting Machine at Seminole, Oklahoma, is shown here is completely satisfied with the threads it produces.

They must, however, satisfy their customers and that is a bigger job. Therefore, they use Landis. And their customers are satisfied. They know that the threads they buy are well formed, of correct taper and of the proper length—these features necessary for tight joints.

The Landis Machine insures tight joints because the distinctive Landis Chaser just naturally cuts good threads. When dull the chaser is ground on the cutting edge and NOT in the throat. Each grinding gives the effect of a brand new chaser. The contour is the same, and full tapered, full length threads are produced the same as with a new chaser. No other threading tool is like this.

The Landis Machine also cuts threads at a profit. This is due to the speed and centralized control of the machine. Also the long life of the Landis Chaser and the wide range covered by one set means low, very low costs.

More Landis-Cut threads are produced in the Oil Fields than any other.

When will you get your Landis? Write for complete data of our new line of machines.

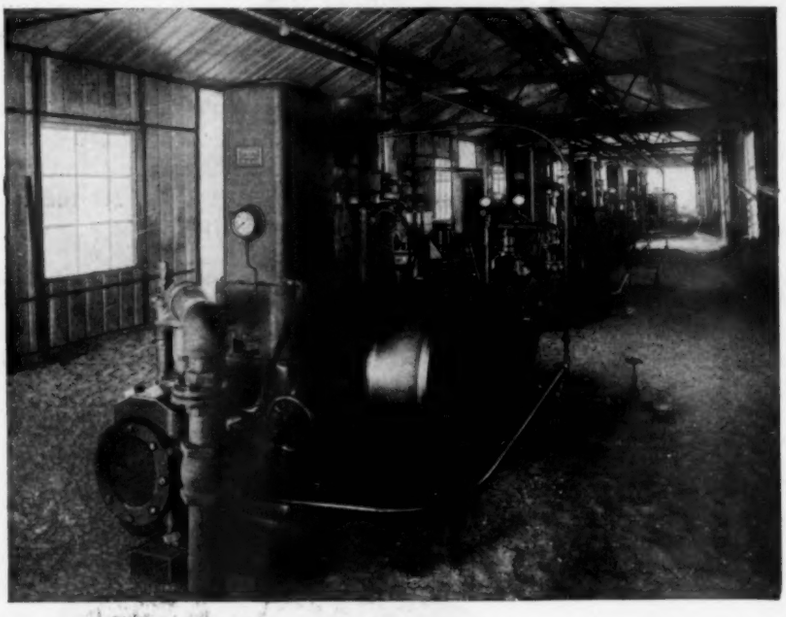
Landis Machine Company, Inc.

Waynesboro, Pennsylvania
Detroit Office: 5928 Second Blvd.

LANDIS TRADE — MARK

Represented in the Domestic Oil Fields by: Colcord-Wright Machinery and Supply Co., St. Louis, Mo.; D. S. Mair Machinery Co., Houston, Tex.; Woodward Wight & Co., New Orleans, La.; Herberts Machinery & Supply Co., Los Angeles, Calif.; Herberts Moore Machinery Co., San Francisco, Calif.; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

Sullivan Oil Industry



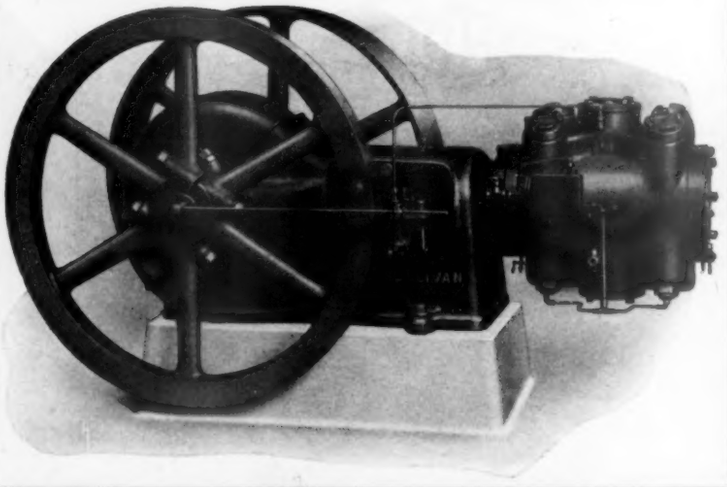
SULLIVAN Compressors for the oil industry are designed especially to meet oil country requirements as to pressures, capacities, and ability to withstand severe usage. Every step in their manufacture takes place in the two great SULLIVAN factories, where all SULLIVAN equipment is built to the highest engineering standards, and according to the most up-to-date practice in design and construction.

Sullivan Angle Compound Compressors are Ideal for Air and Gas Lift Service

Notable records for dependability, economy and convenience have been made by SULLIVAN Angle Compound Air and Gas Lift Compressors in Oklahoma, Texas and Arkansas.

This is a compact, comparatively light, easily transported machine which gives pressures up to 1,000 pounds. Its *Angle Compound* design permits light weight with extra large safety factors, and with lower bearing pressures. This design also accounts for the lack of vibration, which in turn allows the use of small foundations and even skid mountings.

Sullivan Angle Compound Compressors are adapted to belt drive from gasoline or electric motor, and to direct connection to electric motor, oil engine or gas engine. Catalog 83-J.



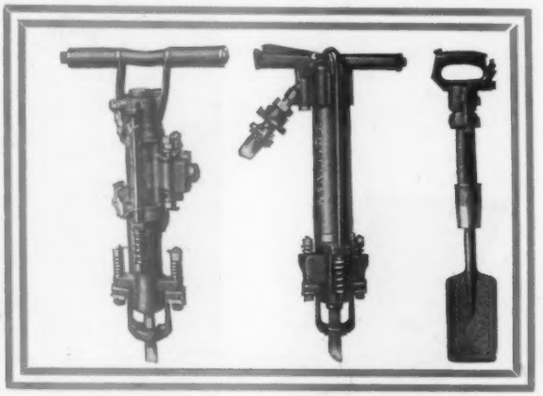
Sullivan Compressors for Repressuring Service

SULLIVAN "WG-6" Compressors supply the trouble-free performance so desirable in repressuring work. They are available in many convenient sizes, for pressures to 120 pounds. Simple, compact and rugged design, "Wafer" valves, positive sweep control unloading automatic lubrication and complete enclosure of working parts are features which allow continuous operation with attention only at long intervals. Ask for Catalog 83-I.

CONTIN

Compressors and Air Tools

The SULLIVAN Engineering Department, with 30 years' accumulated knowledge and experience in building and using air power machines, is at the service of operators who use this equipment. SULLIVAN Compressors for the oil industry and SULLIVAN Air Tools and spare parts are available through CONTINENTAL Stores.



"If CONTINENTAL Sells It, There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

General Offices: St. Louis

Export Office: 74 Trinity Court, New York

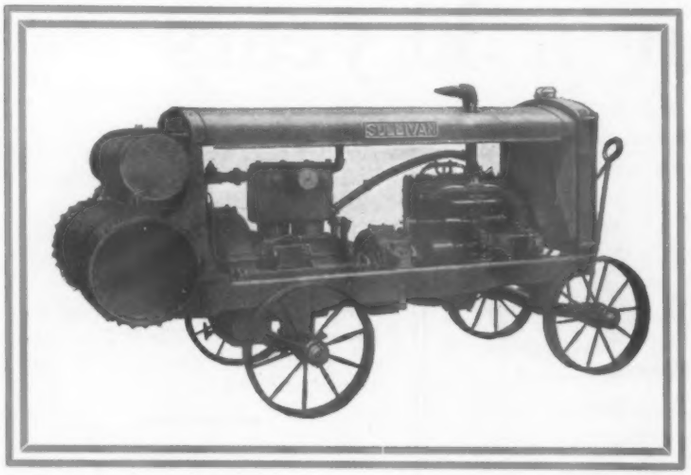
London Office: 316-317 Dashwood House, Old Broad St., E. C. 2

THE CONTINENTAL SUPPLY COMPANY, Ltd.

411 Lancaster Bldg., Calgary, Alberta, Canada

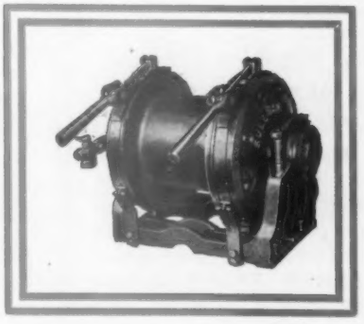
Sullivan Air Tools Speed Construction Work and Save Labor

Sullivan Rotator Rock Drills, Concrete Breakers, and Clay Spaders save time and labor in excavating and other oil country construction. Ask for Catalogs 81-S, 81-I and 81-N.



Sullivan "Vibrationless" Portables Furnish Dependable Air Power

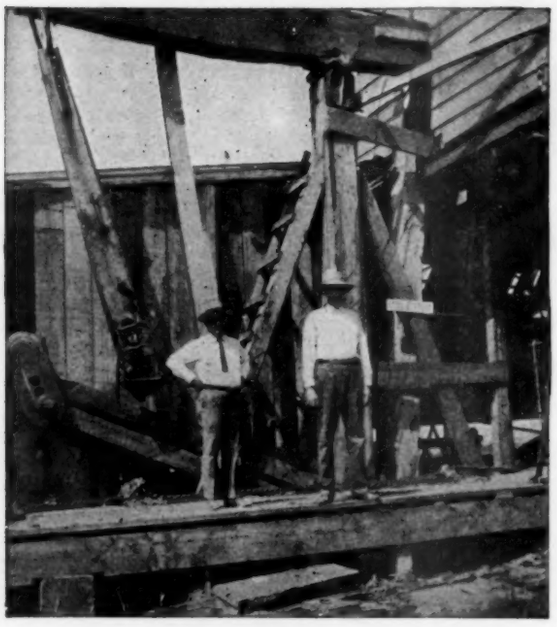
SULLIVAN Portable Compressors supply dependable air power for running Turbinair Hoists and various air tools used in construction work of all kinds. These compressors are so correctly designed and so finely built that a glass of water filled to the brim will stand undisturbed on the frame of a machine running at full speed. "Vibrationless" Compressors, powered by Gasoline Engines, are available in capacities of 110, 160, 220 and 310 cu. ft., and on steel wheels, trailer trucks, motor trucks, or skids. Ask for Catalog 83-F.



Sullivan Turbinair Hoists Save Time in Hoisting and Hauling

This hoist, weighing only 345 pounds will lift a ton on single line, or pull a 50-ton car on level tracks. Extremely useful in erecting tanks, spotting cars, loading and unloading material, etc. Air and electric models are available, with one or two drums. Ask for "Handy Hoisting and Hauling."

IENTAL



Highflex belt in service with Brown, Cady & Donnelly, Ft. Worth, Texas, still going strong after drilling 5 wells, total 18,285 ft. Sand storms frequent—grit has not affected Highflex. Federal belt clamps and Federal belt stretches used. Detailed report of drilling:

Well No.	Ft. Drilled	Size of Tools at Start	Size of Tools at Finish
1	3930	20"	6 5/8"
2	3260	20"	8 1/4"
3	4000	20"	6 5/8"
4	3820	20"	5 7/8"
5	3275	20"	8"

The greatest advance in belt construction in 30 years

Goodrich Highflex Principle makes for notable service records in oil drilling and pumping

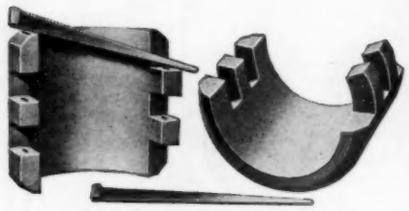
GOODRICH Highflex belting makes possible new economies in power transmission in drilling and pumping service. Because of their unique construction, Highflex belts have been called "the greatest advance in belt construction in 30 years."

The Highflex Principle does away entirely with the old-type, folded-edge construction. Highflex belts have no folds. The square edges eliminate the binding action at the edge of old-type belts. There is nothing to interfere with the uniform free action of ply upon ply.

As a result, Highflex belts have proved their stamina on extreme drives, such as oil well drilling rigs. One oil driller writes that with Highflex belts he gets "ten months against service of 2 to 8 months of previous belts."

Highflex belts eliminate bootlegging, resist injury from clamps, and deliver more power.

We will gladly send additional information. Write to The B. F. Goodrich Rubber Co., Akron, O., or the branch nearest you.



For Rotary Drillers

Goodrich Grip-Tite Casing Guards Save Power in Drilling

Friction between drill pipe and casing is eliminated. A bearing of rubber surrounding the drill pipe saves casing from friction and shocks, eliminates water leaks and saves 25 to 33% in power. Easy to install—no special tools. Cannot work loose. Send for additional data.

Oil Field Branches

The B. F. GOODRICH RUBBER CO.

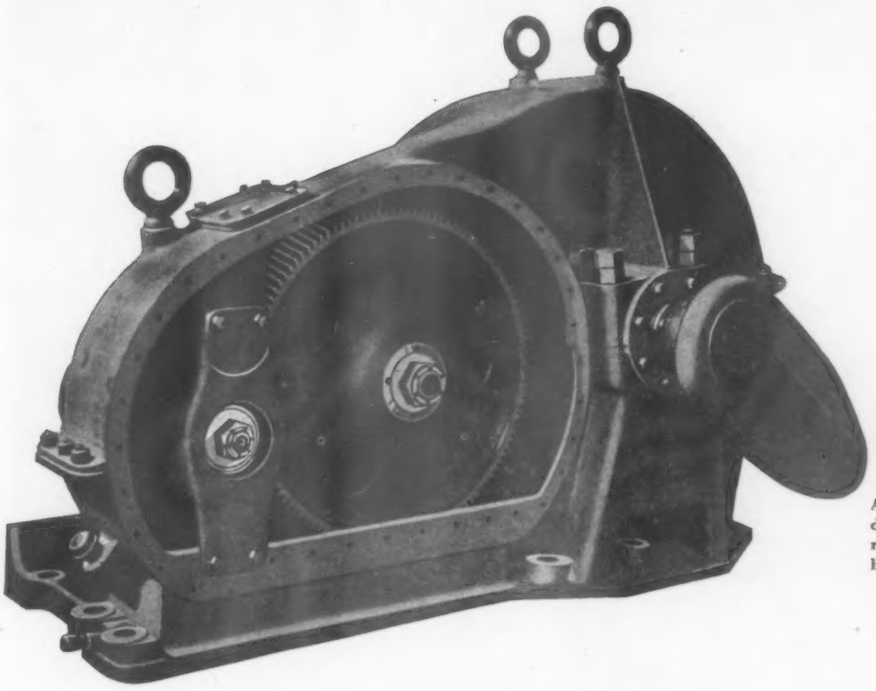
1201 Young St. . . . Dallas, Texas
2422 Broadway, Kansas City, Mo.
285 So. Peters St., New Orleans, La.

PACIFIC GOODRICH RUBBER CO.

1386 E. 7th St., Los Angeles, Cal.
650 2nd St., San Francisco, Cal.
2625 Walnut St. . . . . Denver, Colo.
and other principal cities

Goodrich

Say you saw it in The OIL WEEKLY



A Westinghouse-Nuttall double reduction oil well unit with side plate removed showing the extreme accessibility for changing the gear ratio.

50 Units in One!

THE exclusive "change gear" feature of Westinghouse-Nuttall double-reduction oil well gear units provides a distinctively simplified arrangement for obtaining the variety of operating speeds required for the various conditions encountered in different wells or for changes in the condition of the same well.

In each of the double-reduction units—OP-11, 13, 14, 15 or 16—more than fifty different reduction ratios can be used, and the prime mover will operate at its most efficient speed with each of them. A gear and pinion for a different ratio—the only additional items required—can be obtained on short notice and the complete change made in less than two hours without even disconnecting the well or prime mover from the unit.

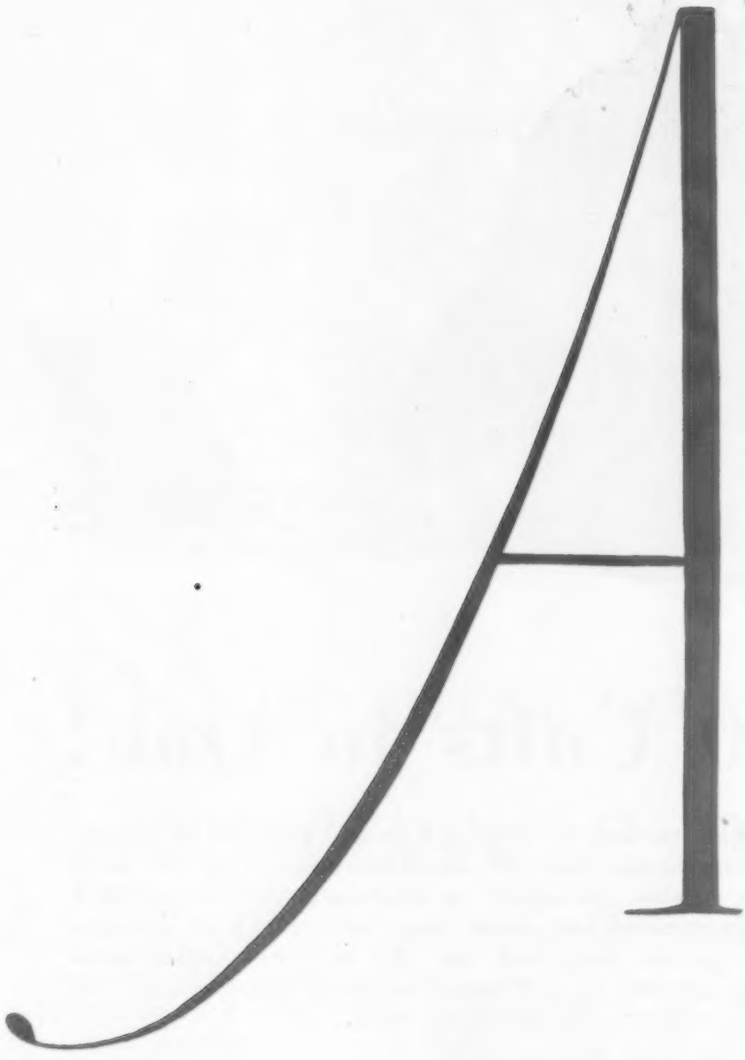
Production equipment that affords this flexibility is indeed an economical investment. Write for full particulars.

Westinghouse Electric & Manufacturing Company
Nuttall Works Pittsburgh, Pa.
Sales Offices in all Principal Cities of the United States and Foreign Countries

T 30333

Westinghouse

Say you saw it in The OIL WEEKLY



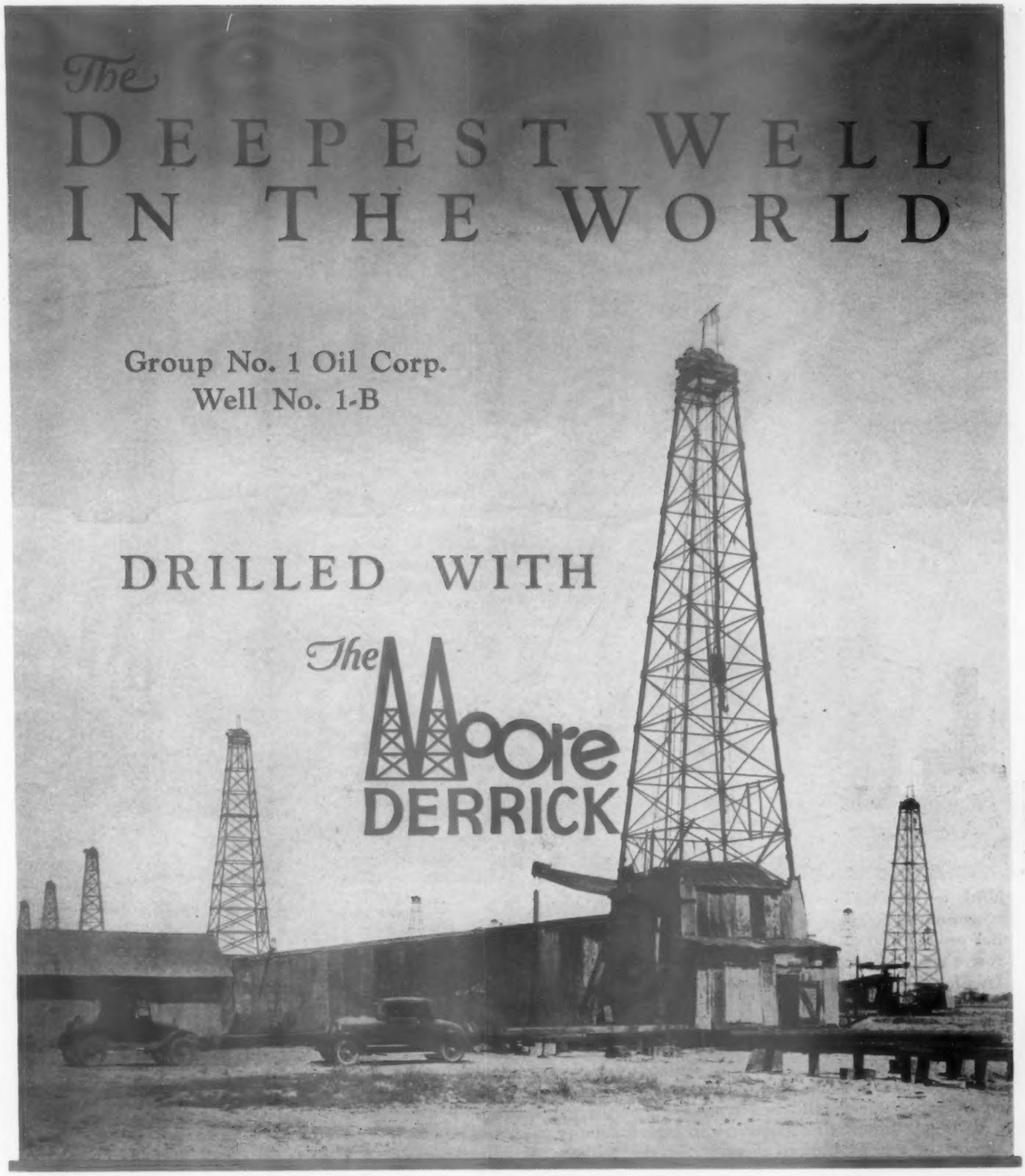
Axelson precision *translates* fine engineering & fine materials into greater service in the well.....

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

Axelson Machine Company
P. O. Box 337, Los Angeles
Tulsa, St. Louis
New York City, 30 Church St.
Mid-Continent and Eastern Distributors
Frick-Reid Supply Corporation

AXELSON
Pumps and Sucker Rods

Say you saw it in The OIL WEEKLY



LEE C. MOORE & COMPANY, Inc.

PITTSBURGH · TULSA

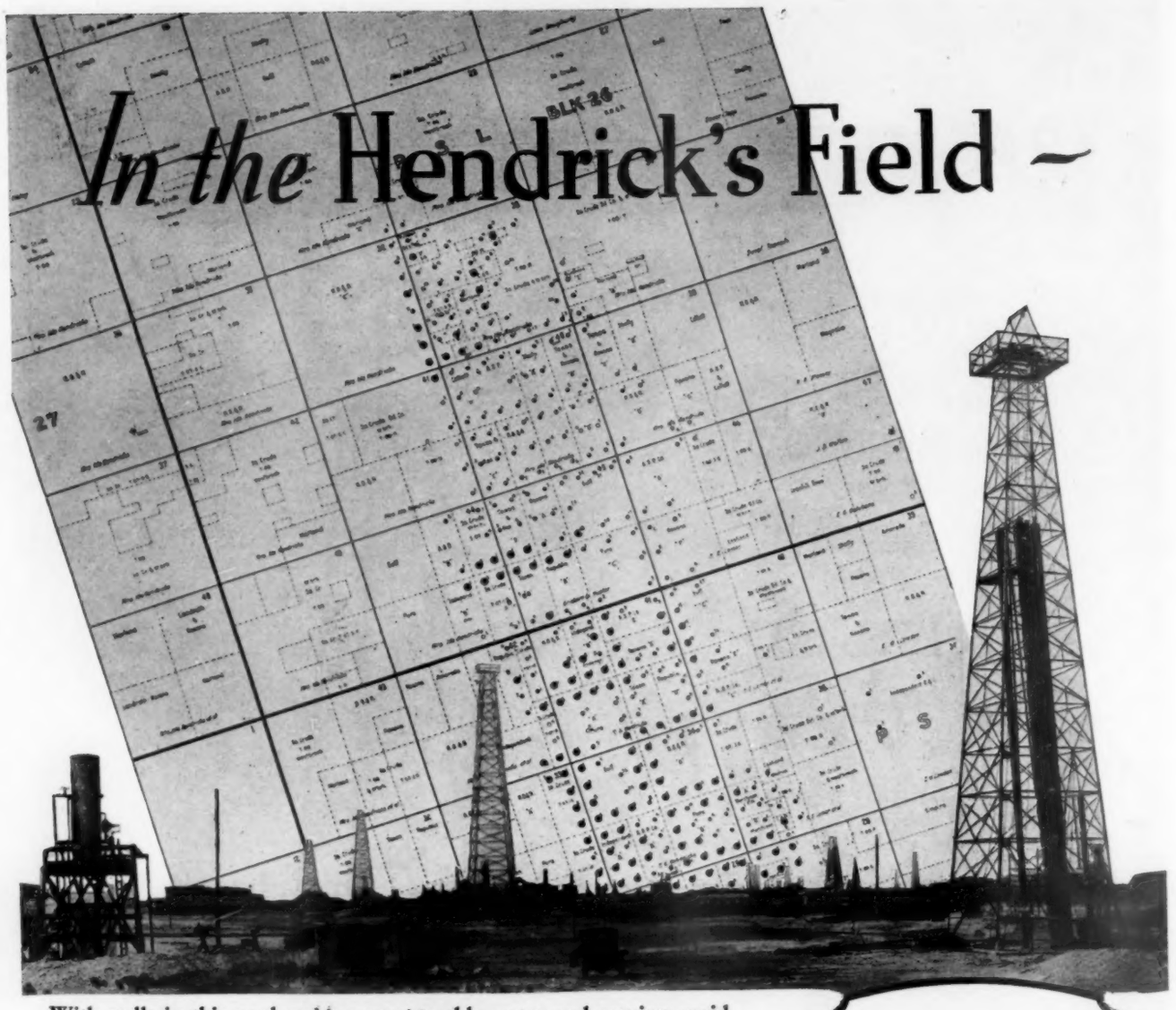
Established 1907

New York Offices: Oilfield Equipment Co., 30 Church St., New York, N. Y.

DALLAS, TEXAS HOUSTON, TEXAS WICHITA, KANSAS CASPER, WYO.
PARKERSBURG, W. VA. SHREVEPORT, LA.

Stocks in all Principal Fields

Say you saw it in The OIL WEEKLY



In the Hendrick's Field ~

With wells in this pool making considerable water and causing rapid corrosion of the pipe, it becomes important to employ material which has proved by test and experience to afford greatest resistance to corrosive conditions.

It is for this reason that so many producers in this area have come to depend upon Byers Galvanized Tubing for maintenance of operations. The advantages of galvanized wrought iron lie, first in the known fact that zinc has greater resistance to corrosion than any ferrous metal. Second, the surface of wrought iron, being furrowed and uneven, affords a better anchorage for the zinc coating, resulting in a considerably thicker and better adhesion of the galvanizing. Third, the wrought iron itself is noted for its high immunity to corrosion, due chiefly to the protection afforded by the millions of silicate slag filaments.

Byers Galvanized Tubing shows a life considerably in excess of cheaper material and even though higher in initial cost, has shown a big saving in replacement and maintenance cost.

Bulletin No. 41, analyzing the advantages of galvanized wrought iron, is available on request. A copy will be sent without obligation.

A. M. BYERS COMPANY, *Established 1864,* Pittsburgh, Pa.
Branch Offices: Houston — Dallas — Los Angeles — San Antonio — Tulsa — Shreveport
Distributors: International Supply Co., Jarecki Mfg. Co., Oil Well Supply Co.

BYERS Galvanized TUBING
GENUINE WROUGHT IRON

Field Report

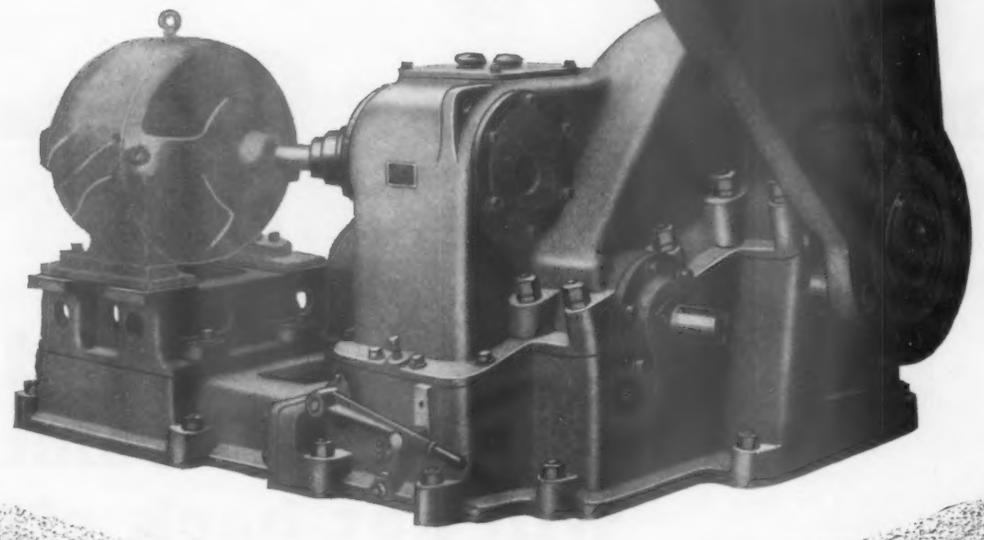
"In a certain well in this area, 500 feet of Byers 2½" galvanized tubing was installed in 1924, having been used as a liner. In 1926, when washing the well, a string of wash pipe was used on the bottom and a quantity of cheaper tubing material, also 2½", was connected to the wash pipe and used above the galvanized liner as wash pipe.

"The well started to flow suddenly and it was necessary to leave the wash pipe in the hole. Two years later, 1928, all material was removed. The cheaper tubing material was completely eaten up while the 500 feet of Byers galvanized material proved to be in perfect condition with the exception of one length having a very small hole in it."

IDEAL

TYPE C-I

DOUBLE REDUCTION PUMPING GEAR



Descriptive Bulletin No. 57 On Request

THE NATIONAL SUPPLY COMPANIES

Say you saw it in The OIL WEEKLY

The BREWSTER Company

A·P·I

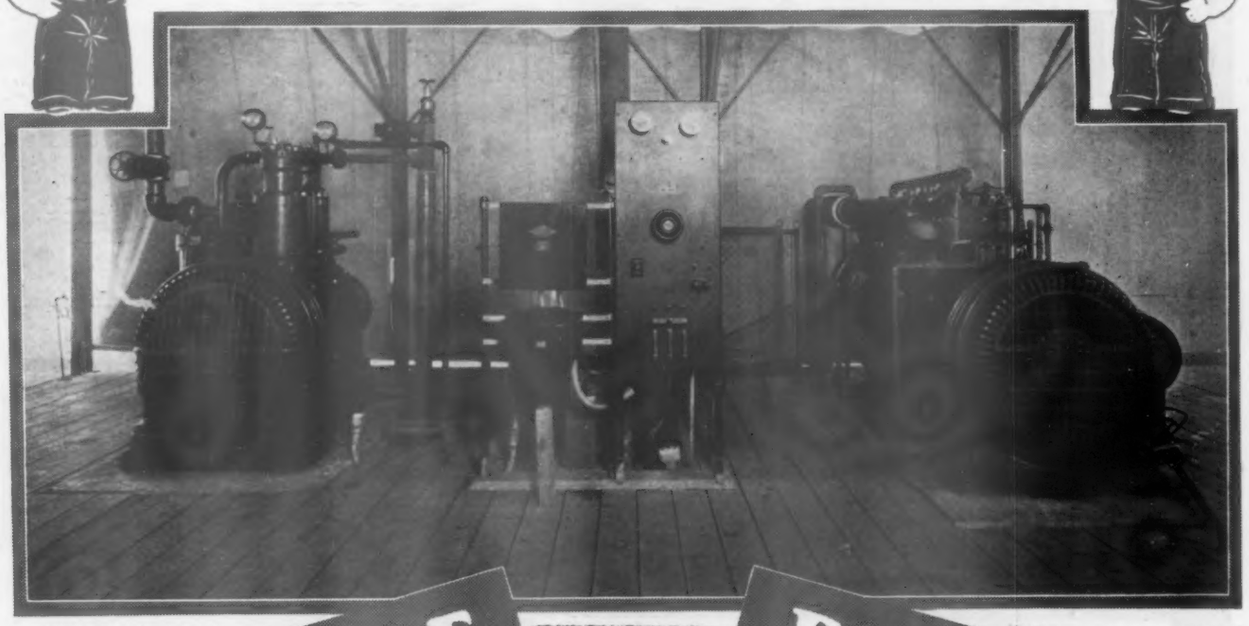
The A. P. I. tool joint has been universally adopted by all companies and operators as standard equipment. Sizes are given in A. P. I. dimensions. All sizes are carried in stock for *immediate* shipment.

Warehouses
OKLAHOMA CITY HOUSTON
FORT WORTH

wedge thread Rotary Tool Joint will not back off going into the hole

The Brewster
COMPANY~INC.
SUCCESSORS TO OIL CITY IRON WORKS INC.
Shreveport, Louisiana

Two New Oil Field Hands You'll Want to Meet



PORTABLE Motor Driven Compressor

Direct Gas Engine-Driven Generator

Two CLARKS Ready for Real Work

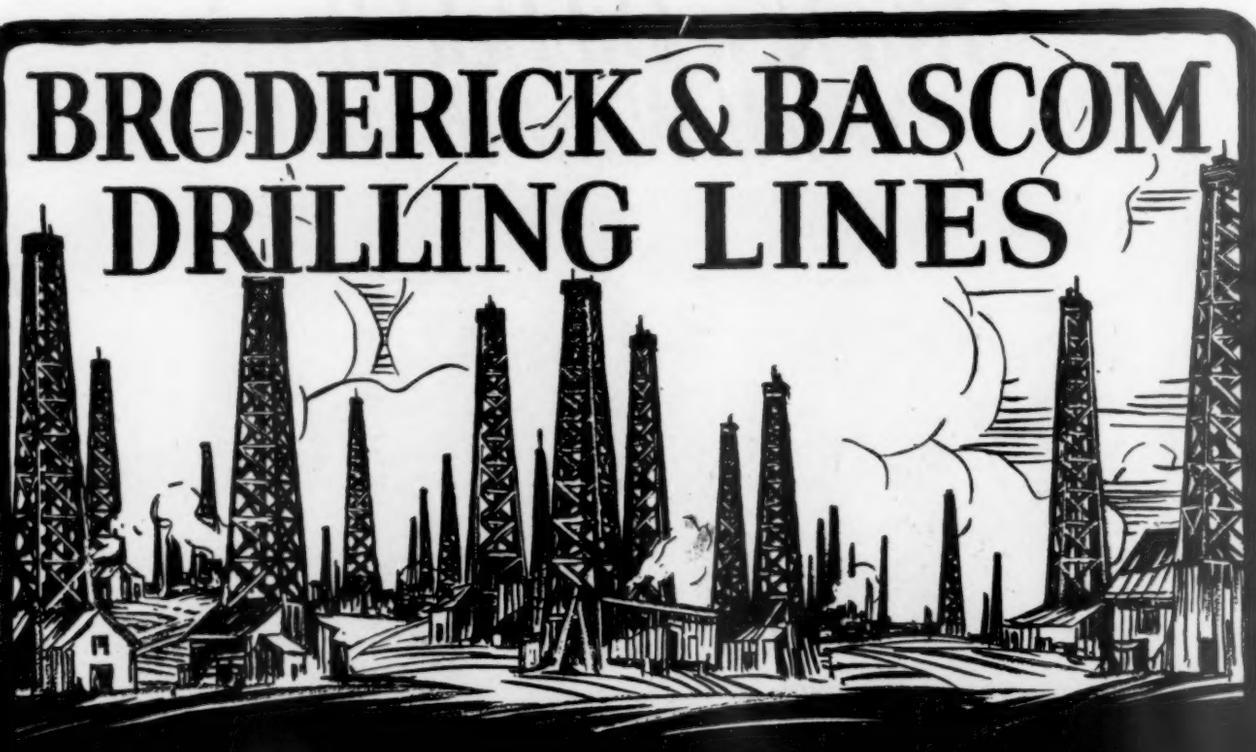
Wherever there is electric power, the CLARK Portable Motor Driven Vertical Compressor will serve efficiently and dependably. Has 90 H.P. Motor at 400 R.P.M., two or four vertical cylinders, two-stage or single stage. Completely enclosed, automatically lubricated and perfectly balanced.

Wherever you desire electric power, the CLARK Direct Gas Engine Driven Generator unit will generate electric current at minimum cost. The unit is fully enclosed, automatically lubricated and perfectly balanced. Engine—4 vertical cylinders, 90 H.P. 400 R.P.M.—uses natural gas or gasoline. Generator—75 k.v.a.—480 v.—3-phase—60 cycle, 400 R.P.M.

Ask our engineers to make you acquainted. Clark Bros. Company, Olean, N. Y. Branches and Warehouses: 125 West First St., Tulsa; McCamey and Sweetwater, Texas; and Artesia, N. M. Smith, Booth, Usher Company, 228 S. Central Ave., Los Angeles, and 50 Fremont St., San Francisco.

CLARK

BRODERICK & BASCOM DRILLING LINES



THE deeper the hole, the more you will appreciate the stamina of famous B. & B. Drilling Lines. They literally "go further." So does the money you spend for them.

Strong, extraordinarily elastic and pliable. Quicker drilling and less risk with B. & B. Patentsteel, Extra Strong or Cast Steel Lines. Also powerful Yellow Strand Rotary Lines for rotary fields.

Write for Catalog 41 and name of nearest distributor.

BRODERICK & BASCOM ROPE CO.
St. Louis, Mo.

Branches: 68-70-72 Washington St., New York and Seattle, Wash.

Factories: St. Louis and Seattle

LR 554

Say you saw it in The OIL WEEKLY

ANOTHER MANUFACTURER OF EQUIPMENT FOR THE OIL INDUSTRY THAT USES SKF BEARINGS

D. & B. PUMP & SUPPLY CO.

YOU MAY BUY A BEARING AS A BARGAIN BUT TRY AND GET A BARGAIN OUT OF USING IT

for

Nothing is apt to cost so much as a bearing that cost so little.

SKF Puts the Right Bearing in the Right Place

Ultimate Cost is the Lowest with SKF Bearings on Oil Field Equipment

PUTTING eight SKF Ball and Roller Bearings on all the vital locations of this oil well pumping jack convinced the D & B Company that they were putting the right bearings in the right place. Actual field conditions under the toughest going have proven the wisdom of incorporating the highest priced bearings in the world in their jacks.

Long life, very little maintenance plus ruggedness to withstand many hours daily of shocks and heavy loads make SKF Bearings first choice of leading manufacturers of oil field equipment. These bearings never require any adjustments .... either in setting up or while in service. With the problem of lubrication reduced to a three or four times a year detail, the operator is sure that SKF performance will be the lowest in cost per bearing hour.

SKF INDUSTRIES, INC., 40 East 34th Street, New York, N.Y. 2220

SKF

Ball and Roller Bearings

Say you saw it in The OIL WEEKLY

When a Well is at Stake —*Take Care*

Use a Supply House That Can Supply You With Proven, Field-Tested Equipment — From Well Stocked Warehouses — When Promised — On Time

TIME was when the blacksmith shop on the lease was a busy place when nearing the oil sand. It was a frantic place when the well blew in. With such limitations, naturally tools were not uniform and many a well was lost because of weaknesses in the equipment used.

Today tools made by reliable manufacturers are uniform. Into the making of them has gone all the skill of practical oil men with years of successful experience; all the knowledge of engineers whose ability is proven by the laboratory and the testing room.

Companies that have made big successes in the oil industry are "not the first to try the new, nor yet the last to lay aside the old." They know that in dealing with a reliable, long-established supply house they are in turn dealing with manufacturers who value their reputation above all things, knowing that upon it depends their success and their future.

Even though your thought of purchase may be remote, talk over your problem with a Norvell-Wilder man. No obligation. His word of advice coming from experience in many fields may mean many dollars to you.

The efficient oil executive wants no weak link in the chain between the pouring of the molten metal for the making of oil field equipment to the pouring of the gasoline into the tank at the back of the automobile or under the hood.

A Supply House is a key link. Make sure it is strong. For on it often depends all the money you put into the well. When you see oil men going year after year to a certain supply house; when you hear oil men say that they can depend on the word of the men from that house . . . . then you know that this Supply House is the one that will measure up to your satisfaction at the end of the fiscal year.

NORVELL-WILDER
HARDWARE COMPANY

Beaumont, Houston, Shreveport
Fort Worth

Say you saw it in The OIL WEEKLY

TITUSVILLE TICO ENCLOSED GAS ENGINES

3 FEATURES

of the new Tico that warrant your *immediate* investigation

For example—all castings of the Tico Gas Engine are of semi-steel; high carbon open hearth steel forgings, phosphor bronze and special alloys are used for all parts subjected to wear or corrosion. These are a few of the many factors that make the new Tico Gas Engine well worth your further investigation.

The TITUSVILLE IRON WORKS Co.
TITUSVILLE - PENNA.

DISTRIBUTORS
The CONTINENTAL SUPPLY COMPANY

For Export
THE CONTINENTAL WELL SUPPLY CO.
72-76 Trinity Court,
New York City, N. Y.

For California
CALIFORNIA MACHINERY SUPPLY CO.
2449-55 Hunter St.,
Los Angeles, Calif.

Titusville Acme Boilers
Single and Twin Steam Drilling Engines
Tico Gas Engines
Band Wheel and Geared Powers

Titusville Acme Rotaries
Acme Swivels and Speed Draw Works
High Pressure Boilers
Crown Blocks
Slush Pumps

RUGGED - ENDURING

When a Well is at Stake —*Take Care*

Use a Supply House That Can Supply You With Proven, Field-Tested Equipment — From Well Stocked Warehouses — When Promised — On Time

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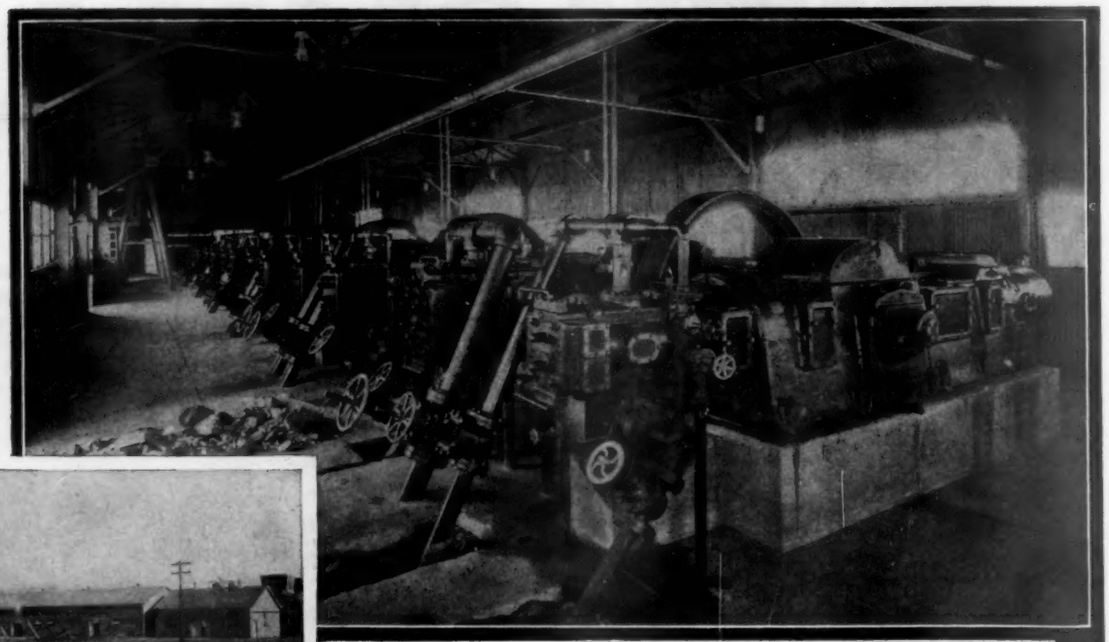

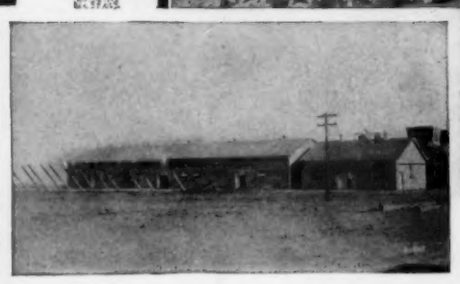

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Volume 52, No. 7 *February 1, 1929*

The OIL WEEKLY

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Internal Affairs *Cramping Balkan* Operations

Proposed changes would give Roumania chance to compete in world oil markets

By H. E. CASSIDY

THE principal oilfields of Roumania lie approximately 30 miles north of the city of Ploesti. The extent of the fields is covered roughly by a huge inverted pyramid, the point of which would be Ploesti itself. The most westerly district being developed at this time is Gorgeta, while Ceptura is the most easterly field. Chief production lies along a belt zone approximately 45 miles in length and 22 miles in width. Extending between these two boundaries, the two provinces of Dambovita and Prahova embrace all of the fields. In fact, the entire area is sometimes spoken of as the Prahova district, inasmuch as the majority of the most productive wells lie within its boundaries. All of the wells, with the exception of those around Campina, are located in the low foothills of the Carpathian Mountains. Most of the exploration work outside of this area has been shallow in character, with little or no commercial production.

It is apparent, then, that the entire zone of prospective oilfields has only been scratched, inasmuch as it extends from Bessarabia and the Black Sea on the east to Hungary on the west.

The absorption of provinces since the world war has resulted in a very conglomerate population, speaking a variety of languages, altho the official one is Roumanian. To what was formerly the old kingdom of Roumania has been added since 1920 the province of Transylvania, formerly the property of Hungary; the province of Bukovina, taken from Austria and the two provinces of Bessarabia and Benat, contributed by Russia. These additions have increased the national area from 50,000 square miles, prewar estimate, to some 122,345 square miles, present estimate, while the population numbers nearly 18,000,000 people.

H. E. CASSIDY

Mr. Cassidy has recently returned from a personal visit to the more important oil fields in Europe where he spent considerable time studying the economic and operating problems of these foreign operations. The accompanying article is the first of a series which he has written for The Oil Weekly. Others to follow will deal with similar subjects on other areas and will give first hand information as to actual field problems and methods.

Government

Up until November of this year the country has been a constitutional monarchy, the actual control of the state, however, lying in the hands of the regency and the Liberal Party, because of the tender years of King Michel. On the date of this writing, November 6, it seems inevitable that the control of the government will pass from the present political regime into the hands of the Farm Labor Party. This change should be an excellent one, inasmuch as over 80 per cent. of the population of Roumania is of the farm element.

M. Manchi, leader of the Farm Labor Party, declares that if reorganization of the government is left up to him he will establish a constitution similar to that in use in the United States, the cabinet and two houses of parliament having accomplished little, either in stabilizing domestic affairs or obtaining satisfactory foreign relations. It seems safe to predict, however, that negotiations which have been under way for the past year with representatives of international finance will be successful and a sizeable loan will be floated from American, English, French and German bankers. Inasmuch as Roumania's national debt has been far in excess of six billion dollars and has increased since the war, rather

Production Costs Prevent Profit in Roumania Development

than decreased, this step should prove a fruitful one.

Transportation Problem

The transportation problem is one of the most serious difficulties with which the oil operators have to contend. The government owns and operates approximately 7100 miles of railroads, which are, for the most part, in poor condition. Of the 30,000 miles of wagon roads there are only 10 miles which could be termed pavement. This stretch of road lies just outside of Bucharest on the way to Ploesti and is part of what is known as the King's Highway. This is supposed to be the best road in Roumania, connecting as it does the capital of the nation with its richest province—Transylvania.

The distance from Ploesti, industrial center of the oil fields, to the seaport of Constantza is about 180 miles but it frequently takes between three weeks and a month to get heavy freight from the harbor to camp. The two rivers of Roumania, the Danube and the Dniester, are a great boon to oil companies who wish to freight from Germany and Austria needed supplies at a cheap rate. The former river is navigable for over 700 miles of its length and the latter for about 100 miles inland from the Black Sea. This condition, of course, makes it easier for German equipment manufacturers to get a foothold in the Roumanian fields.

With the exception of Campina there is no possible rail connection with any of the fields. The northern branch of the main line from Bucharest to Budapest runs through Ploesti and spur tracks cover the numerous refineries adjacent to the town, but there are no operating fields in close proximity to Ploesti. Freight service, even on this main line, is highly problematical.

Most of the hauling on the wagon roads is done by oxen, auto trucks seldom being practical because of the tremendous road punishment to which they are subjected. All of the supplies used in the fields, with the exception of those purchased in Austria or Germany and freighted down the Danube, are shipped to the port of Constantza on the Black Sea. Here they are unloaded, reloaded on railroad cars and so hauled to Ploesti. Rail service has greatly improved of late but the first few years after the war ox carts could have freighted the equipment faster than railroads, if it could have been loaded on them.

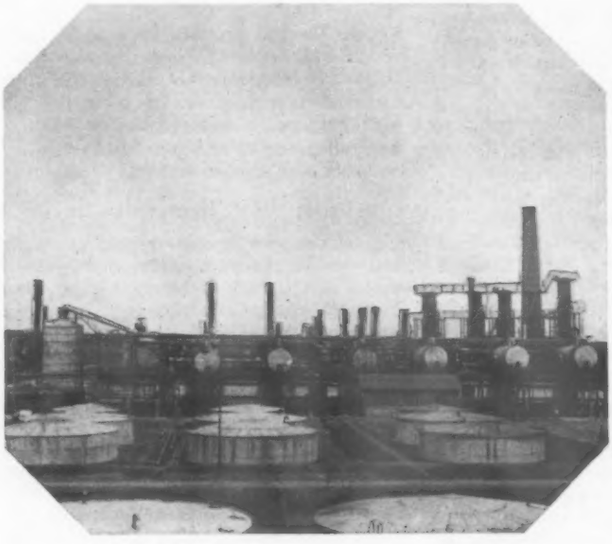
No Dumping Ground for Obsolete Equipment

Because of these transportation difficulties supply houses in Roumania are forced to carry heavy stocks as are oil company warehouses. This frequently leads to an over supply of some types of equipment, with a consequent "loading up" of products which are superseded in a short time by new or improved articles. This "old stuff" must either be scrapped or used to the detriment of the "cost of drilling per meter column." Supply houses have frequently made the mistake of shipping antiquated equipment to Roumania or selling such equipment which had become out of date while carried in stock. This has probably been due to a feeling that Roumanian operators working in a country 100 years behind its neighbors were not modern in their methods. This has been far from the case, as the majority of operators know as much about methods and equipment in California and the Mid-Continent as do the domestic operators themselves. The feeling that some of this equipment could be profitably "unloaded" on the shores of the Black Sea was erroneous. This was an excellent place to unload it and some of it is there yet, but the future sales of the particular supply house that did the unloading dropped appreciably. Some have learned their lesson and come to realize that men who can produce petroleum in spite of governmental interference, inefficient field labor and the opposition of nature are rather hard men to fool.

There are nine concerns at the present time which may be regarded as the major operating companies of Roumania. Their leases and camps are scattered over the entire four district area, interspersed with small independent producers. There is, however, a general tendency toward merger and consolidation, with their resultant centralization of development and effort.

The Romano Americana, subsidiary of the Standard Oil Company of New Jersey, was founded in 1904, while the Dutch Shell organized the Astra at about the same time. The Romano has perhaps 12 per cent. of the entire production. The

Transportation Offers Greatest Problem At Present



rest is divided among the Astra; the Phoenix, an English concern; a French company called the Columbia and a number of Roumanian companies, such as the Creditul Minere and the Steaua Romano.

Subsoil Nationalized

Prior to 1924 the owner of the land also owned the subsoil and could dispose of it as he saw fit. Since that time the government has nationalized all subsoil property, at the same time favoring Roumanian operators with some of the richest lands in the area. The policy of the Conservative Party in power, up until probably a year ago, was a complete exclusion of foreign capital and companies, as far as was possible. The slogan of "Roumania for the Roumanians" came into use and the foreign producer faced hindrances to progress in the path of his every move. The impossibility of adhering to this policy has recently become apparent to the political leaders. The imports of foreign supplies and the export of crude and refined products were seriously affected by the "exclusion" policy while it was in effect. Development work and production has naturally suffered. In fact, but for the discovery of a new deep sand in Morani it is possible that several foreign concerns would have given up in disgust and pulled out at the height of what seemed to be a peak period.

The existence of oil in Roumania goes back as far as 1550, when it was discovered running from rocks in its natural state. At first it was used exclusively as a medicine and as a lubricant for the primitive wagons and machines of the peasants. Wells were hand-dug at this time but as there was no demand for oil for other purposes it was allowed to run into the creek bottoms and waste.

In 1884 the first impetus was given the industry when, in what was then Galicia, oil was distilled into a species of refined petroleum. Several hundred new wells were soon down in the northeastern portion of the area and in the vicinity of Moinesti, Salonti, Pacuret Clubas and Sarata Buzau. The primitive methods of the peasants naturally gave very poor results, but inasmuch as the people had no confidence in the resources of the country it was not until Drake had bored his famous well in Pennsylvania that appreciable development work was accomplished.

Foreign Entry

In 1896 American methods were introduced and from this time on production steadily increased. The total amount of oil produced between 1854 and 1896 was 74,841,744 barrels, of which 14,636,592 barrels were exported. In other words, as much petroleum is produced in Roumania at the present time in two years as was produced in this entire period of 42 years.

Lack of capital, adequate transportation and storage handicapped the Roumanian industry so seriously that as late as 1900 America was furnishing the Balkans with petroleum. During this second period the wells were largely dug by hand and in some instances went as far as 660 feet. Production varied from five to 50 barrels per day and continued on this basis until mechanical drilling was inaugurated. In the late nineties a refinery was built in Ploesti and kerosene was supplied to Bucharest for the purpose of illumination, Bucharest being the first city in the Balkans to be so favored.

Sospiro was the name of the man who brought the first Pennsylvania outfit to Roumania from the "States." His first hole proved to be a gusher, producing 152,000 barrels of crude per year, but due to inadequate handling methods most of the oil ran into the river beds.

It is probable that the total capital and investment up to 1900 did not exceed $5,000,000 for the entire industry. The spring of 1896 marks the second tremendous change in the entire industry for it was at this time that foreign capital first became interested in the future of the country. What is now the Steaua Romano was formed by German and Hungarian interests and drilled the district of Campina, obtaining splendid results. This particular region is now exhausted, although considerable production is being maintained through a series of tunnels and wells pumping on "heads." Attempts to apply the same methods in this Campina field which are being used with success at Pechelbronn, in France, have not proven successful. Final attempts were abandoned over a year ago and since that time nothing has been accomplished in the line of "mining" petroleum..

From the first, wells multiplied rapidly.

At Campina and Bustenari refineries were built, reservoirs and pipe lines were constructed with typical German efficiency. Every effort was made to develop and maintain the field in intelligent fashion. At this time American interests proposed, through the Standard Oil Company, in conjunction with the Disconto Gezelshaft, that the Roumanian government give them 30,000 acres of land on a 50-year lease basis, with the privilege of constructing a pipe line to Constantza. Although in dire financial straits, with a budget deficit of roughly $15,000,000, the Liberal Party opposed the move and saved the local industry from what they chose to term "foreign domination."

Government Built Pipe Line

In answer to the demand for transportation of refined oil the government was forced to build its own pipe line from Ploesti to Constantza at a cost of some $5,000,000. From the first this line was only intended for refined products and not for the handling of crude. At the present time it is not kept in the best of condition and the operators have great difficulty in obtaining satisfactory results through its use.

At the beginning of the World War in 1914 the Germans headed the foreign investors, controlling both the Steaua, Romano Concordia and Vega, which they had financed to the extent of about 30 per cent. English capital was slow to become interested, as usual, and did little development work and made few investments until the fleet started to switch to oil burners, at which time a marked increase was noted. French capital, however, started coming in at an early date, forming the Aquila and the Columbia of the present day.

It is interesting to note that during the period ending at the start of hostilities, Roumania had only seven per cent. of the capital invested and only four per cent. of the production. The balance of the capital and production was being adequately handled by foreign concerns, who paid extremely high dividends, the lowest being around 15 per cent. Because of the determined development program, in 1912 Roumania occupied the fourth place in the world's production of petroleum.

World Production for 1913

United States 250,800,000 barrels
Russia 68,400,000 barrels
Mexico 22,800,000 barrels.
Roumania 15,200,000 barrels.

An old chart taken from a Roumanian publication gives a comparison between the exports in 1906 and those in 1913:

	1906 Barrels	1913 Barrels
Petroleum	1,444,000	3,252,800
Benzine	608,000	1,831,600
Fuel Oils	7,600	60,800
Distillate	516,800	2,872,800

War Destruction

The Roumanian oilfields were so completely destroyed by British interests prior to the German occupation that no methods, no matter how effective, could put the fields in operation again for a year and a half. The actual monetary loss to the industry was $500,000,000, not considering the terrific setback to development. Colonel Thompson, under whose orders the work of destruction was carried on, was at that time a prominent local contractor at Ploesti and his work was detailed and complete. No a single tank or refining plant fell into the hands of the Germans in a condition in which it could be used.

At the request of the British government, 1677 wells were destroyed, of which 1047 were producing large amounts of crude. Nearly 8,000,000 barrels of oil was fired and 26 refineries were destroyed. This work of destruction was carried out two days before the German army entered Roumania. What was termed "nailing up" the wells was an idea of Colonel Thompson. He had bundles of 10 to 14 inch spikes dropped down the casing and in the tubing, filling them in many cases to the top. They were fastened so as to be practically impervious to attempts at "fishing." Altogether more than 10,000 oil tanks were fired, among them being a large number belonging to the Romano Americana.

Destruction Described

The description of an American superintendent who was an eye witness to the measures taken to prevent supplies from falling into the hands of the Germans is most graphic. The scene offered by the petroleum district of Ploesti was indescribable. To every derrick, to every tank and to every refinery were sent gangs of men who were to do the work of destruction at a given moment. On the day that this work was done it looked as if the entire nation of Roumania was going up in smoke. Day turned into night with a sky of flaming red. Nothing could be seen for miles around but dense volleys of smoke, signifying the destruction of millions and millions of dollars worth of property. Nothing was left for the Germans. Colonel Thompson made a good job of it; not a tank, not a refining plant escaped destruction, no matter what the nationality of the interests that owned or operated the property.

"In the total destruction of the oil fields the Germans lost a prize they had eagerly hoped to possess. For weeks before they invaded Roumania, we could see the Teuton airplanes hovering over the oilfields like birds of prey. Contrary to reports issued from time to time by the German war office, every district in Roumania suffered the same fate, Campina, included. The Germans did gain possession of tremendous quantities of wheat and foodstuffs which English interests had accumulated, even though agents of the Allies tried to destroy it by soaking it with oil."

Payment to to oil companies for this wholesale destruction was arranged by the Roumanian government on the basis of complete reparation over a 40 year period with interest at four per cent. For this purpose Roumania received from England $43,650,000 and from France $84,875,000 which was deducted from the war debt. In no instance, however, did a company find that their appraised loss corresponded with that actually suffered. After 1919 the work of restoration began but it was of necessity slow and uncertain.

After War Reorganization

After the war the government nationalized the German companies which it had seized and shared the three biggest, the Steaua Romano, Concordia and Vega with the French and English. At the same time the pure Roumanian companies called Creditul Minere I.R.D.P. and Petrolul Romanesc were formed. Whereas, before the war Roumanian interest in the industry was only seven per cent. it now increased to 39 per cent. and all companies will be nationalized 30 years from 1924, according to the new Roumanian law of mines. At present foreign interest is represented as follows:

There are 27 English companies with a capital of $118,450,000;
There are 12 French, Belgian and Italian companies, $45,000,000;
There are Dutch interests to the extent of $10,000,000;
There are American interests to the extent of $7,500,000.

Roumanian companies number 114 with a total capitalization of $83,805,151.

It was not until 1922 that the industry began to find itself and drilling was carried on in a systematic manner. In 1924 the record year of 1913 was passed and yearly production has steadily increased since that time.

Drilling in Roumania today is carried on with modern equipment for the most part. The rotary system has practically superseded all others and is proving highly satisfactory. In addition, cable tools are used and two types of flush percussion drilling known locally as the Alliantza and Erkelentz. The government has forbidden any more hand dug wells. The oil is brought to the surface by either bailing, pumping, or through the use of the air and gas lift.

In 1926 there were drilled a total of 854,750 feet and the average daily production per well was 82 barrels. In June of that year there were 3870 wells of which 1299 were producing,

(Continued on page 110)

Hydraulics *of* Salt Dome Waters—

By HARRY PENNINGTON
Mechanical Engineer

WITHOUT doubt, the source of salt dome cap rock water is from water sands above, or surrounding the dome, and the proximity of fissured cap rock to these water sands is a measure of cap rock water volume capacity.

Included in the term cap rock is all of the rock found on top of the salt core, regardless of whether the rock is limestone, gypsum or anhydrite, although the term cap rock has usually been applied to a very hard, siliceous limestone very difficult to penetrate with the drill even though very thin compared with the underlying limestone and other rocks.

As found by drilling, the most usual stratification of rocks overlying the salt consists of the thin layer of siliceous limestone, then limestone, gypsum and anhydrite, or, perhaps, the anhydrite is underlaid by a dolomitic limestone, or there may be no anhydrite at all, directly on top of the salt. In the usual drilling done in oil development, no particular distinction has been made between these rocks in logging wells; the terms gypsum, anhydrite and limestone appear to be used indiscriminately without any exactness. But, in sulphur mining, the distinction is quite important, for sulphur is found above anhydrite, and wells are carried no further when the limestone and gypsum sulphur bearing zones have been penetrated to the anhydrite. So, only in hulphur mining has cap rock been carefully identified and logged up to the present time.

There has been no particular reason why an oil prospector should spend any money identifying strata of cap rock, up to the present time, but, when making a study of the hydraulics of waters found in cap rock, an identification is quite necessary, and the writer has made the same from time to time for purposes of determining water conditions.

Open and Closed Domes

If a water sand is pierced by an uplifting salt dome, as shown in Figure 1, the water sand is in contact with the flanks of the dome. If, as shown, the elevation of water sand is the same as that of the capping rock, or of a mantle of cap rock extending down the flank, the water sand may deliver water into the open fissures of the rock, if any fissures exist at that level. Such flow of water is indicated by calcite found in cavities or fissures.

Since Gulf Coastal Plain water sands are usually artesian, if a well is drilled into cap rock of such a dome as that of Figure 1, the well will flow water.

This condition exists on the South Liberty dome, where two wells drilled into cap rock have flowed sulphur water for many years—one delivering great quantities. Thus, we have a dome with the interior of its cap rock open to artesian waters and since the source of water from the sands, is rainfall at the outcrop of the sand, or seepage directly into the same, the quantity that might be taken from cap rock is as inexhaustible as that from the water sand itself.

Water wells on the Gulf Coast have been producing water from these sands since 1875, and a battery of wells equipped by the writer over 20 years ago have delivered from five to seven millions of gallons daily every day since that time. With such water sands as a source of supply, and with cap rock open to inflow, Liberty is what may be termed an open dome.

On the other hand, the Sour Lake dome has artesian water sands above the cap rock, which furnish potable, sulphur free water. Further, wells down the flank of this dome have disclosed water sands against the flank and both these sands are shown in Figure 2. Although, beyond question, the upthrusting cap rock and salt pierced water sands down the flank as shown, there is no communication between this sand and the cap rock interior; when the writer last studied this condition, there was a water level in the in-

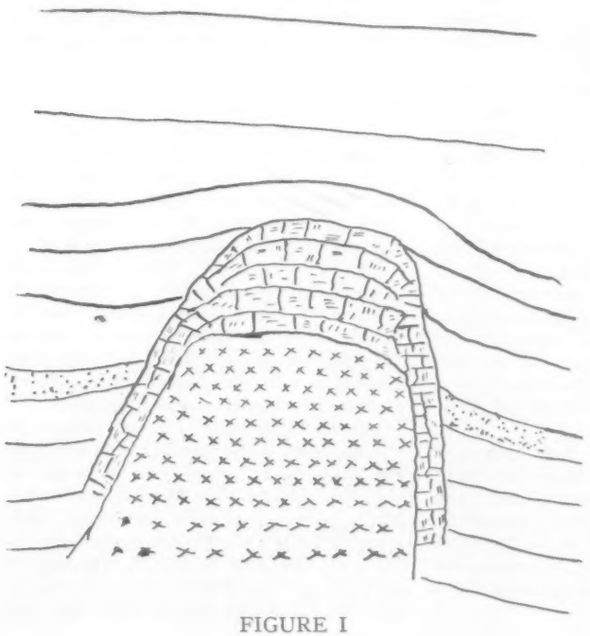


FIGURE I

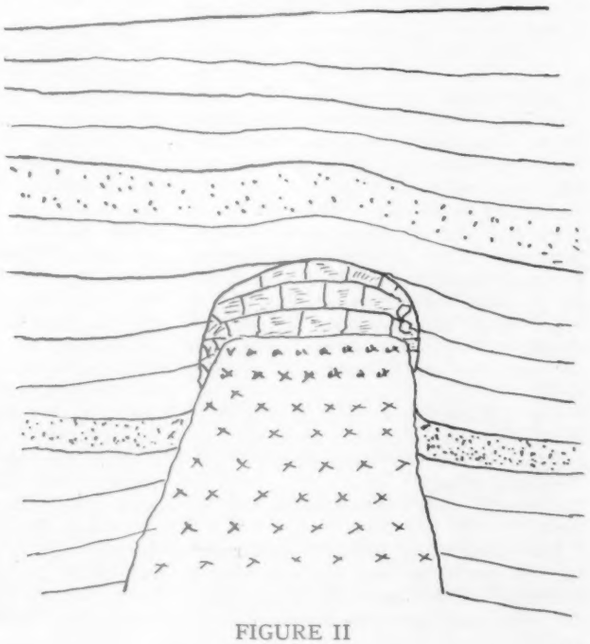


FIGURE II

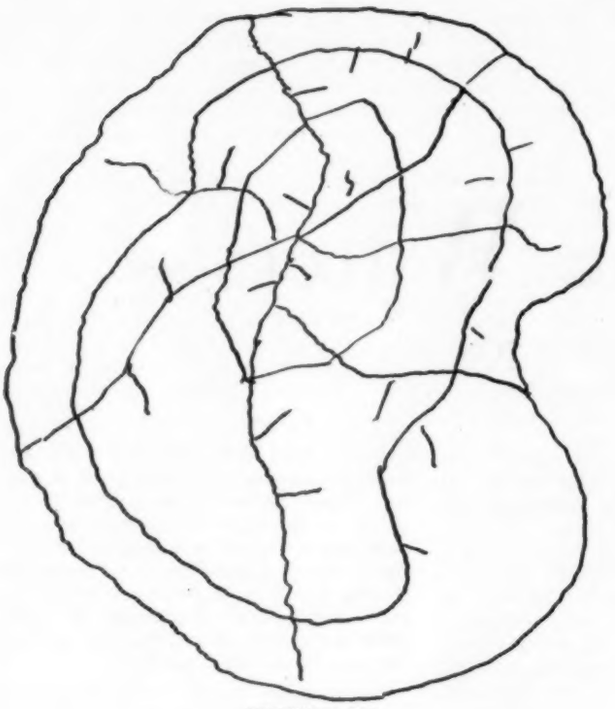


FIGURE III

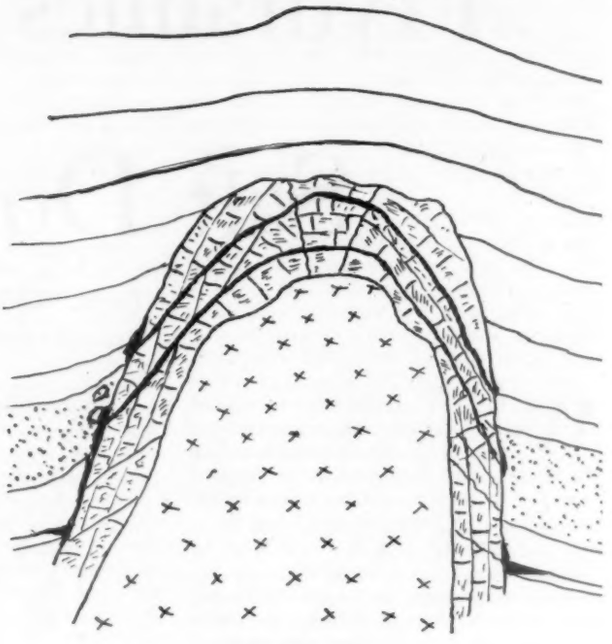


FIGURE IV

terior of the cap rock, below the cap rock surface a short distance. At that time, the original high cap rock pressure had subsided and there was a thin layer of oil on top of the water in the cap, remaining after the flush of Sour Lake was taken out, and by setting the working barrel carefully, this oil was skimmed off, affording substantial production for some years.

Setting the working barrel too high, nothing at all was pumped; setting it too low, nothing but salt water came out, but setting the barrel exactly, by inch measurement, the oil was produced along with some water.

The Sour Lake cap rock is fissured as we found in the original drilling for cap rock production when this dome was discovered, or rather, when production was found in the cap rock of the dome.

If the fissured cap rock interior was in communication with the upper, or the flanking water sand, the interior of the dome water level would rise to the height of the static level of water in these sands, but since there is a difference of over 800 feet in the static level of water in the dome, and in the upper water sand, and more than that difference in the flanking sand, Sour Lake is what may be termed a closed dome, in that there is evidently no communication between flanking or upper sands and the dome interior, although the capping rock has many cavities, and the rim of cap rock is badly broken.

For a dome to be open in this wise, there must be in correct position:

Upper or flanking water sands;

Open fissures;

Communication between sands and fissures.

Examining these critically with reference to any dome with cap rock (there are some in Louisiana without cap rock), the water conditions may become clearer, together with the mode in which oil accumulates, either on top of the dome, or down the flank.

It is evident in the Sour Lake dome, that since large production was found on top of cap rock, there must be a line of migration from somewhere down the flank, from an upper sand, and that in the lower sands, where oil has been found in quantity, there is no open communication up the flank.

Since the water in salt dome cap rock is found in cavities, or fissures, which form the communicating channels for migration of water, these necessarily require study.

Many rock fissures have a filler of gumbo, or sand, or clay, as shown by cores.

Fissures

The cap rock of all known Gulf Coast salt domes is of sedimentary origin, having perhaps been originally laid down in a saline lake and subsequently, upthrust of the salt elevated cap rock to where we find it today. In one case, of which the writer is aware, the dome was still rising in 1925 and 1926 at a rate of about six inches per year, as shown by spirit leveling on to bench marks at a distance from the dome. That is, the ground surface was rising. Whether the salt was still rising is another question, however, for, if the salt mass is stationary, the expansion in volume of anhydrite, altering into gypsum, would also elevate the ground surface, on account of the great force set up by recrystallization of the anhydrite into gypsum.

Since the cap rock of most domes is broken, with some exceptions, however, we find by drilling, that fissures have been formed, some of which have opened up, forming slip fault planes down the flank and plain fissures on top, forming the cavities into which drill pipe drops when penetrating the same.

The causes of fissuring may be as follows:

Differential upthrust of the salt core, elevating cap rock unequally, breaking up its originally level strata;

Differential subsidence of the salt core unequally, further breaking up its originally level strata;

Differential subsidence of cap rock, due to erosion of salt from beneath by passing waters;

Upthrust of an unequal secondary nature of the upper portion of cap rock, due to increase in volume of anhydrite when it alters to gypsum in the presence of pure water;

Pressure of cap rock against adjoining sediments during uplift, breaking the cap rock, particularly around and near the rim.

Differential upthrust is illustrated by Blue Ridge dome where, in one direction, a ridge extends partly across the salt surface, with cap rock on top of and mantling the ridge. It is evident in this case that unequal upthrust, or unequal subsidence of the salt core has broken the cap rock badly, as shown by cores of past years and by recent operations of sinking a shaft through cap rock and sealing it into the salt core, for salt mining purposes.

The salt spines of several Louisiana domes, the superelevation of the middle portion of the Saratoga dome, the inequalities of the salt surface on top of the Hoskins Mound dome, and other instances of differential upthrust may be included, or of differential subsidence.

On the other hand, the salt surface of the Hockley dome appears to lie almost flat, which would lead to the conclusion that cap rock on this dome is not broken badly. Cores, and tests for water tightness in wells through cap rock down to the salt, for ascertaining the conditions surrounding the mining of salt and of gypsum from this dome, show that this

conclusion is correct, for there appear no open fissures in any diamond drilled wells on this dome, nor any in a shaft sunk down to about 200 feet, or about 100 feet into gypsum.

On this dome, cap rock extends a short distance down the salt flank, as shown by logs of wells drilled, and water is found down the flank in quantity, but, so far as the writer has been able to determine, no water has been found in any cap rock well away from the rim toward the middle portion of the dome.

On this dome, however, a 60-foot stratum of lime rock overlies a stratum of gypsum down to a dolomitic limestone below, and the upper lime rock is broken, but since the lower gypsum and dolomitic limestone appear not to be broken, it follows that there must have been originally, a bed of anhydrite between the upper limestone and the lower dolomitic limestone, which anhydrite has completely altered to gypsum. The subsequent secondary upthrust caused by altering anhydrite has evidently broken the upper lime rock.

By way of explanation, a gypsum crystal is quite distinct in form from an anhydrite crystal; when anhydrite alters to gypsum due to the presence of water, the crystalline structure is reformed, accompanied by an increase in volume of 33 per cent., but, aside from the addition of two parts of water, the chemical analysis of the gypsum is the same as that of the anhydrite.

The forces set up by crystallization, or recrystallization are so great that the resulting pressure is resolved upward where there is less resistance than from below, and since we find many domes with gypsum, that we know was originally anhydrite, we know that a small portion of the total uplift of the surface of cap rock has been cause by expansion to a greater volume of anhydrite to gypsum.

If cap rock was not broken by upthrust of salt, the secondary upthrust just described is very easily the means of breaking up that portion of cap rock above the anhydrite; the writer has found this to exist and has attributed it to such secondary upthrust, for there is no explanation otherwise of why the lower rocks are not broken also, in a dome of the Hockley type.

Since fissures form the channels for water movement as well as oil movement, in cap rock, the position of fissures is material. In this respect, there are several types of domes:

The peak and the ridge type of salt core, which type has either a peak or ridge extending upward, locally, from the upper salt surface, with mantle of cap rock extending over and down the sides of peak or ridge, but not down the main salt flanks; Figure 5;

The peak and ridge type as above, but with the rock extending in a mantle down the lower main flanks of the salt core; Figure 4;

The flat type of salt core with a rock cap, but without mantle down the salt core flank; Figure 2;

The flat type of salt core, with mantle of cap rock extending down the salt flanks; Figure 1.

In the peak and ridge type, naturally, the upthrusting salt caused fissuring and faulting with displacement in some cases. The peak type is shown in Figure 3, in which type, there are shown both radial and circumferential cracks. The salt peak would be expected below the center of radiating fissures, although, in some cases, the peak of cap rock is not found immediately above the peak of salt. The radial fissures appear to have an almost vertical position as shown by cores.

Circumferential fissures, however, appear to hade downward at a lesser angle than the dip of strata, as shown in Figure 4. This type of faulting indicates that a slip might accompany the movement; in some cases, the jointing plane of slip fault is shown by a slickenside passing through a core with the jointing planes highly polished, in which the bedding plane dip and the fault hade angle indicate the position of the sediments that formed the rock.

Although open fissures are found, it does not follow that all of them are open; they may be found closed, and also, frequently are found filled with gumbo, or sand.

Where the bedding plane of formation, and the fault plane, are located as shown in Figure 4, cavities also appear in the circumferential cracks, some of which make considerable trouble in drilling.

If the circumferential fissures were in such position that the hade is reserved, it would be evident that they where caused by subsidence, but as shown, nothing but upthrust could place them in such position. In two cases, a reversal appears evident, but has not been proven because of the difficulty in orienting cores.

In this type of dome with open fissures, the migration of water may be in almost any direction—around, across, or partly around and across, the dome.

In anhydrite, expansion due to recrystallization into gypsum—a phenomena that introduces more or less of a plastic movement—may close a cavity, or may close the entrance to a cavity.

In drilling, when a cavity is struck with the bit, if the cavity is in open communication with outer waters, the pressure of such water will enter the well and make it flow, but, if there is no communication, the moment the bit penetrates the cavity, the drilling mud in the well flows downward, into the cavity—or "the bottom of the hole drops out," when upper water, from an upper cavity, may flow down the bore hole into the lower cavity, and rock fragments may accompany the water and lodge above the bit, freezing it in the hole.

If oil should accumulate against the flank of a cap rock mantle, as shown in Figure 4, which figure is a companion to Figure 3, such accumulation would necessarily occur where there is no communication between the sand and an open cap rock fissure, else, when the oil arrived at cap rock, it would have proceeded further, along a line of open migration, to the peak cavities of the rock.

We may then conclude further that in domes where sands are against fissured cap rock mantles, the likelihood of finding oil in a sand against the mantle is remote, but, by drilling further down, below the mantle, to where the sands are against the salt, there is a chance of accumulation here, for in no case have we yet found the salt with open fissures. In many cases this has been done, as at Pierce Junction, Spindle Top, Humble, where there appears to have been no line of migration between the lower flanking sands and the broken cap rock above the salt that would allow oil in quantity to flow into the upper cap rock.

In a dome like that of Figure 4, it is entirely possible for water to migrate from a water sand on the up dip side of dome, into the cap rock, on through, and out the other side, back into the same sand. The writer believes this occurs in some instances on account of finding water sands down the dip, away from the dome, charged with sulphur. That is, these two water sands were considered the same, but on account of the lenticular and stringy nature of many Gulf Coastal sands, it is possible of course that these were two distinct water sands.

Further, since oil migrates through water to upper levels, these studies of the hydraulics of salt dome waters should, in many cases, establish data from which estimates may be made of whether oil can migrate from a sand against fissured cap rock mantle, into the rock, and up to the peak of the rock, to a cover.

In no case has the salt been found broken and fissured like cap rock, perhaps on account of the more plastic nature of the salt having allowed it to remain homogeneous. And in no case, save one, has oil been found in the salt, which leads to the further conclusion that the chances of finding oil down the flank of a dome are greater alongside of the salt, than up higher, alongside of a mantle of flanking cap rock.

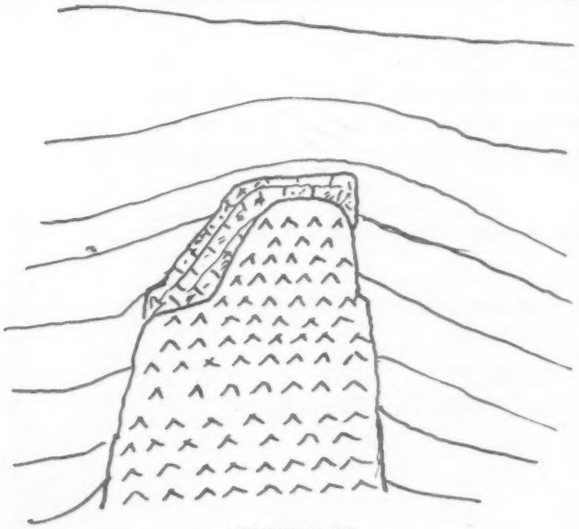


FIGURE V

Publisher's Announcement

THE importance of foreign oil operations has grown steadily since the World War. Countries which at that time were "potential producing countries" have since become potential market breakers.

New discoveries in geophysical, geological and engineering sciences have been applied in foreign fields as well as in the home fields of America, to the point where the oil problem is world-wide.

Complaint has been made frequently that the oil publications have failed to recognize this growing importance of foreign operations. We do not believe that the oil publications have failed to recognize its importance, but they undoubtedly have failed to take the necessary steps to present to their readers the facts on foreign operations in a comprehensive way.

For a number of years THE OIL WEEKLY has had in mind a world survey written by a member of the editorial staff. Each year the advisability of such a survey has become more apparent as production in foreign nations climbed.

We are now pleased to announce that THE OIL WEEKLY has already started such a survey, having chosen a man whose ability to do the work cannot be questioned.

Mr. Roy E. Leigh, whose qualifications, experience, etc., are given on the opposite page, resigned a responsible position as an executive of the Trinidad Oilfields Operating Company, Ltd., to associate himself with the editorial staff of THE OIL WEEKLY, and he is now on his way to South America on the first leg of a trip around the world which will include every oil field outside of the United States before his trip shall have been completed.

Mr. Leigh's articles will contain an intimate report of operations in the foreign fields as he sees them.

The various fields, their operating problems, general conditions, etc., will all be covered in detail. A general survey of the potentialities, as far as can be determined from interviews, study of statistics and conditions on the ground, also will be a feature.

The series of articles which will be written by Mr. Leigh will go a long way to give oil men a more definite idea of the situation, and a clearer picture of foreign operations as they really are.

Mr. Leigh is not a stranger to readers of THE OIL WEEKLY. At various times in the past contributions from him have appeared in THE OIL WEEKLY. He has a most pleasing style—and in his assignment covering matters of human interest to a man engaged in the oil business, he will tell of what he sees in a manner that cannot fail to draw the attention of his readers.

At the same time, he is qualified to write as a man who has spent most of his adult life actually engaged in the oil business.

We are sure that the reports of his visits to foreign fields will be followed closely by readers of THE OIL WEEKLY in America and abroad.

R. L. DUDLEY,
Publisher THE OIL WEEKLY.

World Wide Survey of Oil Situation Undertaken by The Oil Weekly

ROY E. LEIGH is a passenger on the steamship "Mayan of Houston," which left Houston last Thursday en route to Curacao, Dutch West Indies, and thence to Venezuela, on the first of a series of journeys which will take him to all oil producing countries of the world, as a special editorial representative of THE OIL WEEKLY.

Mr. Leigh joined the organization of THE OIL WEEKLY late in December, when he severed his connection with Trinidad Oil Fields Operating Company, Ltd., (Standard Oil Company of New Jersey) with whom he was secretary and assistant treasurer, and stationed in Trinidad for two years. En route to Houston from Trinidad he visited New York and Washington, where he spent several weeks making preliminary arrangements and collecting data bearing upon his work now undertaken in South America.

Previous to his connection in Trinidad, Mr. Leigh held a responsible position with the Louisiana Oil Refining Corporation and associated companies, of Shreveport, Louisiana, from 1920 to 1926. His connection with the oil industry started under Judge William D. Bates of The Texas Company at Houston, and except for a period of service with the forces in France, has been continuous. These connections have given him intimate first-hand experience in all phases of the producing branch of the oil industry—in scouting, construction, drilling, production, pipe line and marine transport, warehousing, statistics, appraisals, budgets, forecasts, estimates, etc.

As an operating executive of large integrated oil companies, he has availed himself of the opportunity to acquaint himself in a general way with the technical and specialized branches of the industry, including geology, engineering, purchasing, accounting, refining, marketing and sales. He has also had experience as a writer on topics relating to the industry, having contributed articles on operating economy and kindred subjects to THE OIL WEEKLY from time to time over a period of seven years.

This background of experience insures that Mr. Leigh's surveys of the South American, European and Far Eastern oil industry will be comprehensive and thorough, and written from the oil operator's point of view, for the interest and benefit of the practical man. He will make personal contact with the men who are actually engaged in oil development throughout the world, and his articles will detail not only the work that is being done in foreign parts but the conditions under which it is being done. He will take the reader with him, so to speak, into strange lands and among strange peoples—into tropic climes, over mountains, through forests, across deserts and over the seas into all parts of the world where oil is found, and give first-hand impressions of conditions as they exist.

Readers are urged to make arrangements now for the permanent filing of this important editorial and statistical material, which will be published in THE OIL WEEKLY from week to week. This is by no means a one-man campaign; the entire scope of the editorial department of THE OIL WEEKLY has been broadened and extended, and the concerted effort of the whole editorial staff will be directed toward the success of this important undertaking.

—Photo by Blank & Stoller, New York

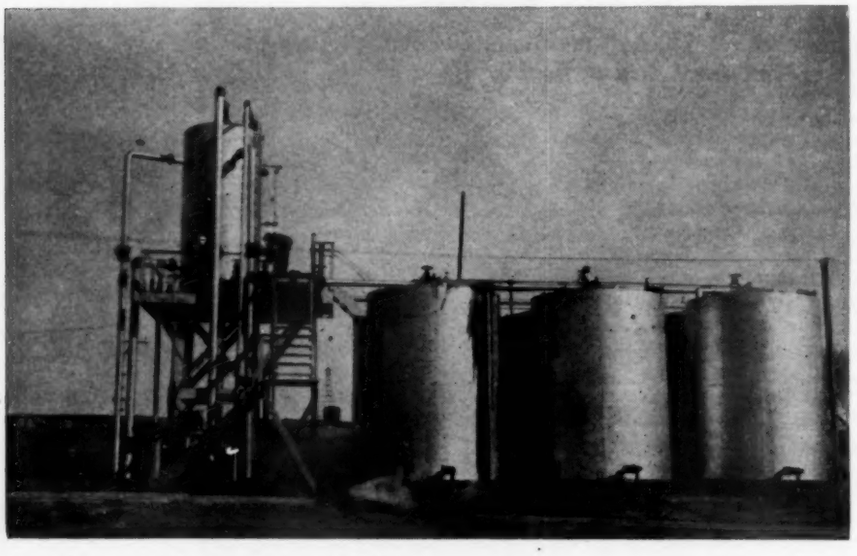
ROY E. LEIGH

Mr. Leigh's first journey takes him to South America, and really was begun when he boarded ship at Trinidad en route to Houston to arrange the details of so extensive an undertaking. His series of articles will begin appearing at once, material for articles on Trinidad having been compiled. His South American itinerary will take him to Venezuela, Colombia, Ecuador, Peru, Bolivia, Argentine and the potential oil bearing areas of Brazil. It is planned that this journey will be completed by the middle of the present year, after which Mr. Leigh will return to the United States and again start for Europe and the Far East.

Centralization Reduces *Flow Tank* Expense

By GEORGE REID
Staff Representative

THE Lefors Petroleum Company, in its operations on leases in the Lefors field, 14 miles southeast of Pampa, Texas, is following the later modern practice of installing centralized batteries of flow tank on each of its properties. In installations of this type, usually consisting of six tanks to each battery in which production for a number of days may be handled, the company also places its single large separator or trap at the site of the tanks rather than at the derrick.



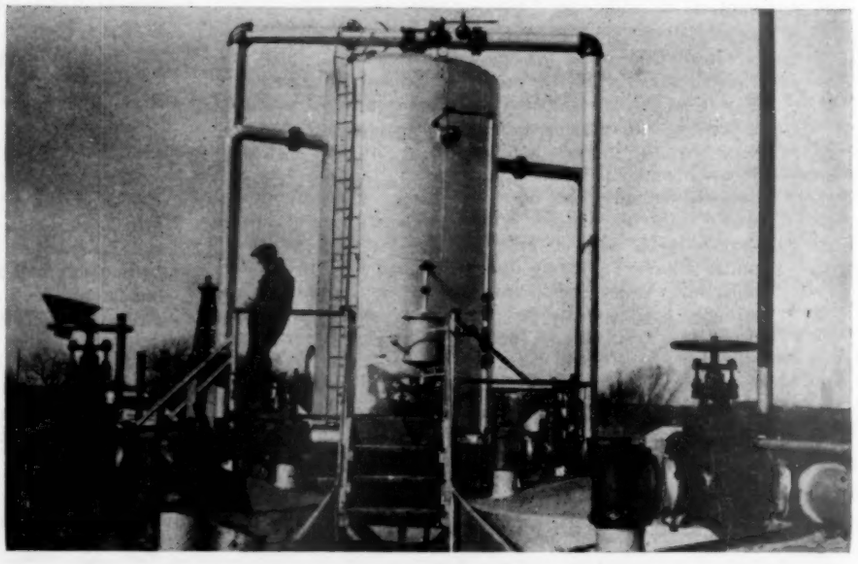
Handling production from four wells. The upper picture shows the flow tanks and separator arrangement and below is a closer view of the separator and hook-up. Properties of Lefors Petroleum Company in the Pampa, Texas, field.

While this practice calls for a separator of larger capacity than would be required for individual traps at each well, the initial cost for separatory equipment is largely reduced. The separator is mounted on wooden framework sufficiently high that the flow of crude from trap to flow tank is taken care of by gravity. Some saving in pipe work and joint of large pipe line is also effected, as well as a real saving in labor costs for installation of the centralized handling system. In the accompanying illustration the large separator is handling production from four wells on one lease. This trap is about 2½ feet above the gauger's walkway, with steps provided at both the front and rear of the battery leading to the trap connections and tank hatches.

Details of the pipe work, connections and fittings, are shown in a second picture. The design of the installation is such that all valves and working parts of the equipment are easily accessable to the gauger. A liquid level control device is provided to maintain the required amount of oil in the bottom of the separator and to permit the steady flow of oil from the trap to the individual tank. Details of the liquid level device are also shown in the illustration. It is placed on the inner platform side of the trap so that it may be easily serviced when necessary. Two six-inch lines extend from the trap outlet out over the top of the three tanks. This type of layout necessitates the use of but one large valve per tank to direct the flow of oil into any one or more of the tanks.

In addition to being designed for efficiency of operation and ease of control the battery was erected with much attention given to the needed guard rails and solid platforms for the safety of the workmen in charge. Steam for the operation of the crude oil transfer pumps, which are located just back of the framework supporting the separator, is piped to these pumps from boilers located some distance away, so as to eliminate danger of fire.

The trap and flow tanks are located very near to the exact center of the producing lease. The four wells producing into the trap range around 400 to 450 barrels of oil and water, each, per day, along with quantities of natural gas. The installation was designed to handle around 2000 barrels per day and during the flush stage was called upon to handle oil and gas in excess of that figure. The occasional spill with its resultant black stain on the tank side is quickly removed by the company and new aluminum paint is applied as often as is required to keep such lease equipment in good appearance.



Informal Discussion of Determining

Open Flow by Pressure Methods

By E. L. RAWLINS*
Bureau of Mines, Bartlesville

The day of minimum gas wastage is close at hand, judging from the interesting facts brought out in Mr. Rawlins' paper. Undoubtedly, there has been an enormous waste of natural gas through the blowing of wells to determine their open flow capacity. Since the experiments conducted by the United States Bureau of Mines prove that it is unnecessary to blow a well wide open to the atmosphere to determine its open flow capacity, it is believed that marked progress will now be made in real conservation of this valuable natural resource.

THE problem of eliminating the necessity of blowing a gas well wide open to the atmosphere in order to gauge its capacity to deliver gas is very important to the industry. During the past several years a considerable amount of study and thought has been directed to the problem by interested producing companies and individuals. It is very interesting to note that the trend in practically every case of effort has been to impose back pressure on the sand face while gauging the capacity of the well to deliver gas—and the more back pressure imposed upon the sand face, the less the rate of delivery from the well while it is being gauged and, therefore, less gas waste. It is desired to have this problem discussed by each of several engineers who have spent considerable time stndying it; to have an interchange of ideas and thoughts as to the possibilities and methods of gauging gas well capacities with as small gas waste and harmful effects on the well as possible; and to crystallize out of the entire discussion plans for furthering study in order that the characterictics of gas flow from a reservoir through sand into the well bore through the producing string to the ground surface under any pressure conditions may be more thoroughly understood. It is only by the combined effort of all interested that the rapid solution of the problem can be made possible and with such cooperation there is little doubt that the idea expressed by one well known gas engineer, "By the end of 1929 there will be no necessity of blowing a well open to the atmosphere to gauge accurately its capacity to deliver gas," will be a fact. Before beginning the discussions, the entire problem can be more easily understood with a brief preliminary sketch of the developments to within the past year or two. At the same time, a brief discussion of the work done by the cooperation of the Bureau of Mines, various producing companies, and the Oklahoma Corporation Commission will be given.

Measuring Open Flow

Any particular gas well has a certain ability to deliver gas into a definite back pressure imposed on the sand face of the well bore. When a gas well is opened to the atmosphere at the well head, it has a definite maximum capacity to deliver gas from the sand to the atmosphere; this capacity depends upon the rock pressure, the sand conditions including texture, frictional resistance, and other factors, the volume of void space in the sand, and the casing or tubing which is the outlet from the sand to the atmosphere. This "open flow" usually is measured by "opening the well wide" at the well head and observing the velocity pressure of the gas with a Pitot tube as the gas is discharged into the atmosphere. The rate of flow then is calculated from this velocity pressure.

State Conservation Commissions have adopted rules which specify that open-flow capacity should be determined at definite intervals — in many cases, at monthly intervals. Although the rules specify that the well shall be produced at a certain per cent. of the open flow in order not to damage the well during operation, determinations of open-flow have not only resulted in gas waste but frequently have been detrimental to the wells. However, at the time that these rules were made, there was a necessity of using some method that would be a basis for proration and also would work to keep wells from being produced too rapidly during operation. In most cases, state regulations limit the rate of gas delivery to 25 per cent. of the open flow. In the Osage Nation this limit is 20 per cent. Therefore, in addition to the fact that blowing a well wide open to the atmosphere is not desirable, it is the concensus of opinion, including the engineers on the conservation commissions, that 25 per cent. open flow does not necessarily represent the most efficient producing condition for any gas well. However, before such rules can be revised, it is essential that a better method be worked out and proved which will answer both questions regarding equitable proration and efficient regulation. This, it is hoped, will be accomplished this year.

The Bureau of Mines, the Corporation Commission of Oklahoma and representatives from different gas companies cooperated in a series of experimental tests in the Chickasha gas field, Oklahoma, to standardize the open flow by the use of well head nipples of different diameters. The results of these tests have been published in a report of investigation, Serial 2885, by the Bureau of Mines.

The object of this work was to establish a relation between the "open flow" volumes taken through well head nipples of different diameters. The result of the study showed that for a definite size of casing there is an approximate relation between the rates of flow through well head nipples of different diameters. This fact makes it possible to measure the capacity of a well to deliver gas by using a small nipple and then to determine the open flow or the flow through nipples of any size by reference to plotted curves.

Measuring Through Nipples

The use of small nipples limits the rate of delivery from the sand and reduces the amount of gas wasted during open flow tests. The relations were the "open flow" through a four-inch nipple plotted against the "open flow" through two-inch, three-inch, four-inch, 5-3/16-inch, 6⅝-inch and 8¼-inch nipples. These curves give valuable information if studied carefully. In the first place, it is noticed that the capacity of the two-inch and three-inch nipples is limited; that a delivery rate greater than four million cubic feet per 24 hours should not be measured with the two-inch nipple; and that one greater than 10 million cubic feet should not be measured through the three-inch nipple. The possible experimental error is too great to warrant the use of these nipples at higher delivery rates. For example, a change from four to five million cubic feet through the two-inch nipple, if converted

*Before annual convention Southwest Division, Natural Gas Dept., A. G. A., Shreveport, La., Jan. 14-15, 1929.

to the 8¼-inch nipple would be a change from 6.1 to 16.4 million cubic feet. Similarly, a change from 10 to 11 million cubic feet through the three-inch nipple, if converted to the 8¼-inch nipple would be 17.5 to 26 million cubic feet. It is possible to use the four-inch nipple through the entire range but precautions should be taken in measuring extremely large open flows. For example, a change from 19 to 20 million cubic feet through the four-inch nipple if converted to the 8¼-inch nipple would be from 44 to 51.5 million cubic feet.

The wells used in the tests were finished with 8¼-inch casing. At these wells, therefore, the gas waste was reduced when the rates of flow were measured with the small nipples as compared to the waste that would have been necessary through the 8¼-inch casing. A four-million cubic foot delivery rate through the four-inch nipple means a reduction of 35 per cent. of the gas that would have been used for an open flow test through the 8¼-inch casing; a 10-million cubic foot delivery rate through the four-inch nipple means a 43 per cent. reduction; and 20-million cubic foot delivery through the four-inch nipple means a 61 per cent. reduction. In the first example, the well produces 65 per cent. of its open flow capacity during the open flow test; in the second example, 57 per cent.; and in the third example, 39 per cent.

There is, therefore, a determinable size of well head nipple that should be used for an open flow test; the plotted curves are a guide to the proper size. The smaller nipples limit the rate of flow from the sand by imposing a greater back pressure on it; and the sand and water conditions are a guide to the allowable rate of flow so that the well will not be harmed. The small nipples, however, are more liable to cause experimental error, especially for large open flows. The final choice of a wellhead nipple, if it has the required capacity to deliver the gas, depends upon the waste of gas and the harmful effect on the well on the one hand and on the other upon the possible error in determining open flow capacity. The latter consideration is of secondary importance.

To eliminate the necessity of blowing a well to the atmosphere, except when the well is "brought in," a considerable amount of study was devoted to a method for determining open flow capacity based upon pressure observations. The results of this work have been discussed before previous meetings of the gas association and reports published and distributed. Also, the method of applying the results practically is somewhat complicated, and in the light of later developments, it is believed that simpler methods of using the data will be applied. However, the work does show that fundamental relations between delivery and backpressure for a particular well exist and will be recognized as an important step from the open flow method of gauging to the pressure method. Only a brief summary of it will be given.

Absolute Open Flow Capacities

From the data from many wells indicated that the capacity of a well to deliver gas could be determined at any time after the initial complete test without again "blowing" the well. Also the information indicated the working pressure which should be maintained to produce the well most efficiently. It was necessary, for comparisons, to use the "absolute open flow capacities" of gas wells. This capacity is defined as the quantity of gas that a well could produce if there were no fractional resistance except that of the sand and the atmosphere. Tests were conducted on two types of wells; those equipped with siphon lines and those not equipped.

To employ this method of determining open flow capacities of gas wells, tests of the original maximum rate of flow together with the series of back pressure tests, are made as follows:

For wells equipped with siphon lines

1. Close in the well and determine shut-in pressure at the well head.
2. Measure the maximum rate of flow through the production string into the atmosphere, observing the pressure in the production string at the well head and the pressure in the siphon line closed at the wellhead.
3. Obtain several rates of flow by holding back pressure at the wellhead, observing production-string pressure and siphon pressure for each rate of flow.
4. Plot two curves on the same chart—one for the relation between absolute production—string pressure and rate of flow.
5. Plot an additional curve on the same chart, showing the relation between the absolute working pressure at the sand and rate of flow. This curve should be extended to intersect the volume axis at zero absolute pressure, thereby determining the absolute open flow.
6. Plot another pressure-capacity curve separately to indicate the delivery in percentage of absolute open flow which can be produced from the sand at various absolute working pressures expressed in percentages of absolute rock pressure.

A similar line of curves can be plotted for gas flowing through the siphon-line.

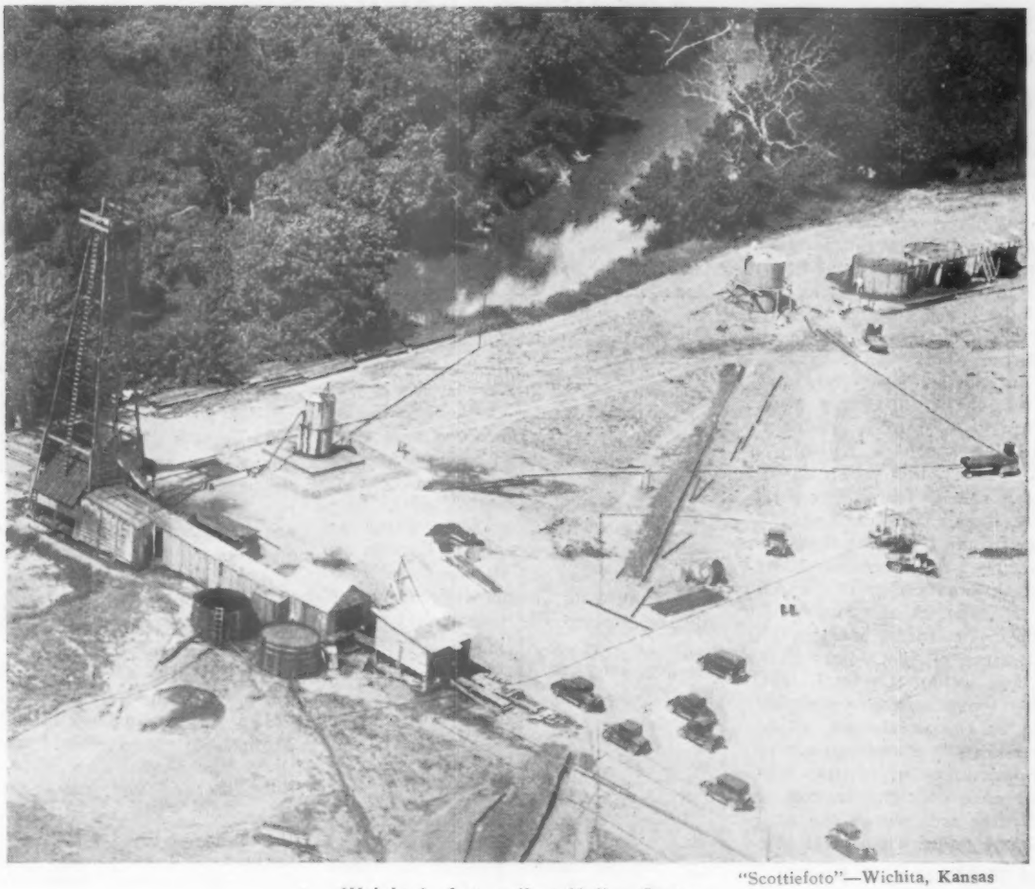
If the well is not equipped with a siphon-line, the procedure of testing is the same, except that the absolute working pressure at the sand has to be calculated by correction from the friction drop due to gas flow. At present the only method of determining this friction drop in the pipe is by applying a suitable pipe-line flow formula.

When a well's potential capacity to deliver gas is gauged by any back-pressure method rather than by opening the well to the atmosphere, the principal advantages are as follows:

1. The determinations of the actual capacity of the well are more accurate. The potential delivery of the well is then judged by the pressure as is should be rather than by the volume which flows through any particular size pipe in a short period of time.
2. Gas waste is eliminated. Since back pressure on the same reduces considerably the rate of flow from a well, it can be seen that much gas waste is eliminated by the proper application of back pressure in gauging open flows.
3. Salting and clogging of the sand is reduced. The holding of the proper back pressure reduces the differential pressure drop at the face of the sand and minimizes the possibility of salting and clogging.
4. The well can be more efficiently operated. As explained later, a well properly controlled and equipped with recording pressure gauges assists the operator in solving problems pertaining to water troubles, bad sand conditions, and other troublesome features of operation such as packer and casing leaks.

Development in the past several years has been toward the use of pressure relations to determine open flow capacity, instead of depending entirely on volumetric measurements at the wellhead, with the well wide open. The ultimate goal, of course, is to eliminate entirely the necessity for blowing gas to the atmosphere at any time during the life of the well in order to obtain its open-flow capacity. To accomplish this objective, the capacity of the well to deliver gas must be determined from the pressure conditions in the well. Data from about three hundred wells indicate that there is a relation for any particular well between the gas available and the sand pressures. In other words, by determining as accurately as possible the ability of a gas well to deliver gas at each of several back pressures, it will be possible to determine the ability of the well to deliver gas under any pressure conditions. H. R. Pierce, consulting engineer of the Bureau of Mines is taking the leading part in this development. It is believed that before any definite relations can be advocated, however, that some laboratory experimental tests should be made to confirm the well tests and also to clarify doubtful problems encountered in the field. The apparatus now is being built, and it is hoped that a report can be released within the next few months.

As stated previously, the combined effort of the engineers who have been working on this problem of gas conservation, should result in the elimination of blowing gas to the atmosphere with the well wide open and instead depend upon pressure conditions for gauging the capacity of a well to deliver gas. The rapid progress that is being made will be seen clearly in the discussions which will follow the brief resume that has been given.



"Scottiefoto"—Wichita, Kansas

Wright 1, first well at Valley Center

Sedgwick *Success* Starts Wide Activity in K*ansas*

By WARREN BAKER
Staff Representative

WICHITA, KANS. — The most important result of the discovery of commercial oil production in the Valley Center area of Sedgwick County, Kansas, is probably the large wildcat exploration campaign that is fast getting under way. It has been years since Kansas received so much attention from the oil industry. Already there are many active wildcat drilling tests, located at intervals of four to seven miles. The present play is covering southeastern Harvey County and northeastern Sedgwick County. The area covered is rapidly being enlarged, southern McPherson County and northwestern Butler County are already being drawn into it. In the furture the campaign is expected to reach larger proportions and spread into other nearby counties.

This wildcat canvas for oil will leave some wealthier but many will be only wiser for their efforts. Like Kansas districts of the past, the new "hot spot" is spotted. Many tests that can be used only for the information they contribute to science are certain to be drilled, especially considering the rapidity with which operators are moving in.

A series of pools along several trends or highs are expected to be the result of the wildcat campaign. Geologists familiar with the district believe that a number of trends are likely to be located, all running northeast by southwest. Sub-surface correlation show that several can be traced. It may require 10 years or more of drilling to uncover all of the pools and trends.

The present play is along a trend running northeast by southwest from the Valley Center pool. Indications are that two fields have already been found along this ridge—Valley Center and the Marland-Goodrich. It is unlikely that these two will connect, although only a few miles apart. Three, four or five pools are generally anticipated along this trend.

Valley Center Field Leads

The Valley Center field at this time is the most important of the two located pools. It has seven completed wells with a daily average production of about 7,000 barrels. It is here that drilling has reached the real stage of competition. Drilling is being started on the townsite and in the suburban tracts and a real race to the producing sand is on.

Completion of the Mary Jane Oil Company's Fitch 1, Section 6-26-1e, for 1250 barrels daily, called for the starting of six offsets and these offsets called for 14 additional tests. Rigs are being erected as fast as possible and drilling pushed in the same manner in an effort to be the first to the pay among these small tracts. Buvibar-Marland-Gypsy companies are moving in four

rotary rigs on their joint property offsetting the Mary Jane Oil Company's well. This is the first time the rotary has been used in Sedgwick County. The advantage expected of them is speed; approximately 25 days are expected to be saved in the completion of the tests.

Despite completion of seven producing wells, there is very little known of the actual outlines of the field. It appears that the south edge is close to the Buvibar-Marland-Gypsy's Lantz 1, Section 12-26-1w. This well ran much lower than its north offset, the same companies' Wright 1, discovery well, and is not nearly as good a producer. One mile to the south is Allison & Fitzwilliams' Gsell 1, in Section 24-26-1w. This well ran 60 feet lower than the Wright well and failed to find any oil. It is one of the few tests that has entirely penetrated the formation. The only other outlining marker is the Alladin Oil-T. B. Slick et al's Smyser 1, in Section 36-25-1w, to the northwest. This well also ran 60 feet lower than the Wright, but unlike the Gsell test, it found oil. There are several other tests drilling to the northwest, all of which are running low and appear to have little opportunity of finding production. The core drill exploration of the Valley Center area shows the field to be on a large dome with a flat top.

Source of Production in Doubt

There are several beliefs and theories as to the source of the oil production in the Valley Center pool. Those familiar with Kansas geology are of the opinion that it is one of the formations in what is equivalent to the Viola lime series in Oklahoma. Most likely it is the dolomite Simpson, which lies just above the Wilcox sand in Oklahoma. Some are of the opinion that the Simpson is being fed from the Wilcox sand, since paleontologists say that a study of the Simpson formation in the producing wells shows that the horizon is dry. The oil, then, must be coming from another horizon, and the most likely is the Wilcox. The only test that has penetrated the Wilcox, with the exception of the dry Allison-Fitzwilliams Gsell 1, is Alladin-Slick et al's Smyser 1, northwest corner of the field. A sample from the bottom of this hole shows that it has touched a ragged sand, perhaps the Wilcox. It was in the last foot that it encountered its pay —previously it looked like a failure. Despite the above information as generally thought by the experts, there are some who still insist that the producing formation is the true Wilcox.

Valley Center producing wells have little or no gas pressure. Several are on the pump and a few swabbing. There is a little pressure, which is thought to probably be coming from water behind the oil. The Mary Jane Oil Company well is already cutting some. However, it is not necessary to treat the oil before it can be used as the cutting, mostly basic sediment, settles to the bottom.

The town of Valley Center, six miles north of Wichita, is rapidly taking on the appearance of a real oil boom town. The roar of the oil field truck from early morning till night, the clang of moving oil field equipment, crowded streets and cafes, as the pipe line gang, rig builder, driller, and teamster mingle together is a common sight in this little vilage which a short time ago took life very quietly and slowly.

LOG

So far all drilling wells are correlated with the Buvibar Petroleum-Marland Oil-Gypsy Oil Companies' Wright 1, SE NE SE 12-26-1w, discovery well of the Valley Center pool. The log of this well can be considered as typical of the district. It was commenced on April 3, 1928, and completed August 8, for an initial production of 55 barrels the first hour, with no water or gas. The well later did 75 barrels an hour. Elevation of the well is 1338 feet. Following is the log: (Figures indicate bottom of formations)

Formation	Depth
Sand & Gravel	52
Blue shale	189
Lime	196
Shale	200
Lime	202
Shale	235
Lime	245
Shale	270
Lime	280
Shale	290
Lime	305
Shale	390
Red rock	400
Shale	440
Red rock	448
Lime	452
Shale	470
Broken lime	490
Shale	560
Sandy shale	580
Sand 1 BW	610
Shale	680
Sand	695
Lime	710
Shale	720
Red rock	730
Lime	750
Shale	755
Lime	760
Shale	765
Lime	768
Shale and Shells	800
Broken lime	825
Shale	835
Broken lime	860
Red rock	865
Sandy lime	875
Blue shale	880
Broken lime	895
Shale	915
Broken lime	930
Black shale	940
Lime and shells	965
Shale	970
Broken lime	1005
Lime	1030
Shale	1095
Lime	1110
Broken sand	1120
Shale	1140
Lime	1143
Shale	1150
Red rock	1155
Red rock	1168
Shale	1176
Lime	1180
Shale	1245
Lime	1250
Shale	1290
Lime	1310
Shale	1315
Sand 6 BW	1330
Shale	1345
Lime	1380
Shale	1395
Lime	1410
Shale	1415
Lime	1420
Sandy lime	1430
Broken lime	1450
Lime	1480
Shale	1515
Broken lime	1530
Blk. shale and lime	1575
Brown shale	1590
Shale	1640
Lime	1645
Lime shale sand	1700
Sand HFW	1715
Black shale	1740
Sandy lime	1750
Broken lime	1755
Lime	1775
Broken lime	1790
Shale	1825
Lime	1850
Sand brown	1860
Sand HFW	1870
Lime	1900
Lime	1987
Shale	2015
Lime	2025
Brown sand	2040
Shale	2050
Blue shale	2060
Blue lime	2070
Brown sand	2085
Blue shale	2095
Gray shale	2230
White lime	2245
Shale	2250
Brown sand	2260
Light shale	2270
Lime	2280
Blue shale	2305
Light shale	2350
Sand	2355
Sandy lime HFW	2365
White lime	2380
Brkn. lime 4 BW	2395
Lime	2415
Broken lime	2430
Blue shale	2470
White lime	2500
Blue shale	2515
Black shale	2530
White shale	2550
Lime, show oil	2565
Lime	2580
5 BW at	2565-70
1 B oil at	2580
Lime 3 BW	2625 2640
2 BO ¼ BW	2640
Sandy lime	2660
Dark shale	2670
White lime	2725
Light shale	2770
Lime	2780
Shale white	2795
Lime	2815
Shale	2825
Lime	2830
Red rock	2840
Shale	2890
Shally shale	2900
Shale	2980
Red rock	3010
Lime	3160
Sandy lime 5 BW	3170
Lime	3245
Lime	3267
Black shale	3272
White shale	3292
Black shale	3330
Gray shale	3367
Producing horizon at HF Oil	3367
Total Depth	3367

The well came in for an estimated 5000 barrels daily, flowing wild. After being shut in and opened up several times it is now doing about 2000 barrels per day. It is cutting some, but not enough to make the matter a serious one.

It is generally conceded that it is producing from a chat found just on top of the Mississippi lime. This depth is considerably higher than the producing depth of the Valley Center wells. A sample of the chat, however, shows it carrying no oil. There was 20 feet of sand found immediately above the chat. This is probably the Burgess sand and may be the source of the oil. The Goodrich is structurally running practically level with the Wright well and might make a producer in the lower formation if deepened to that horizon.

Marion County

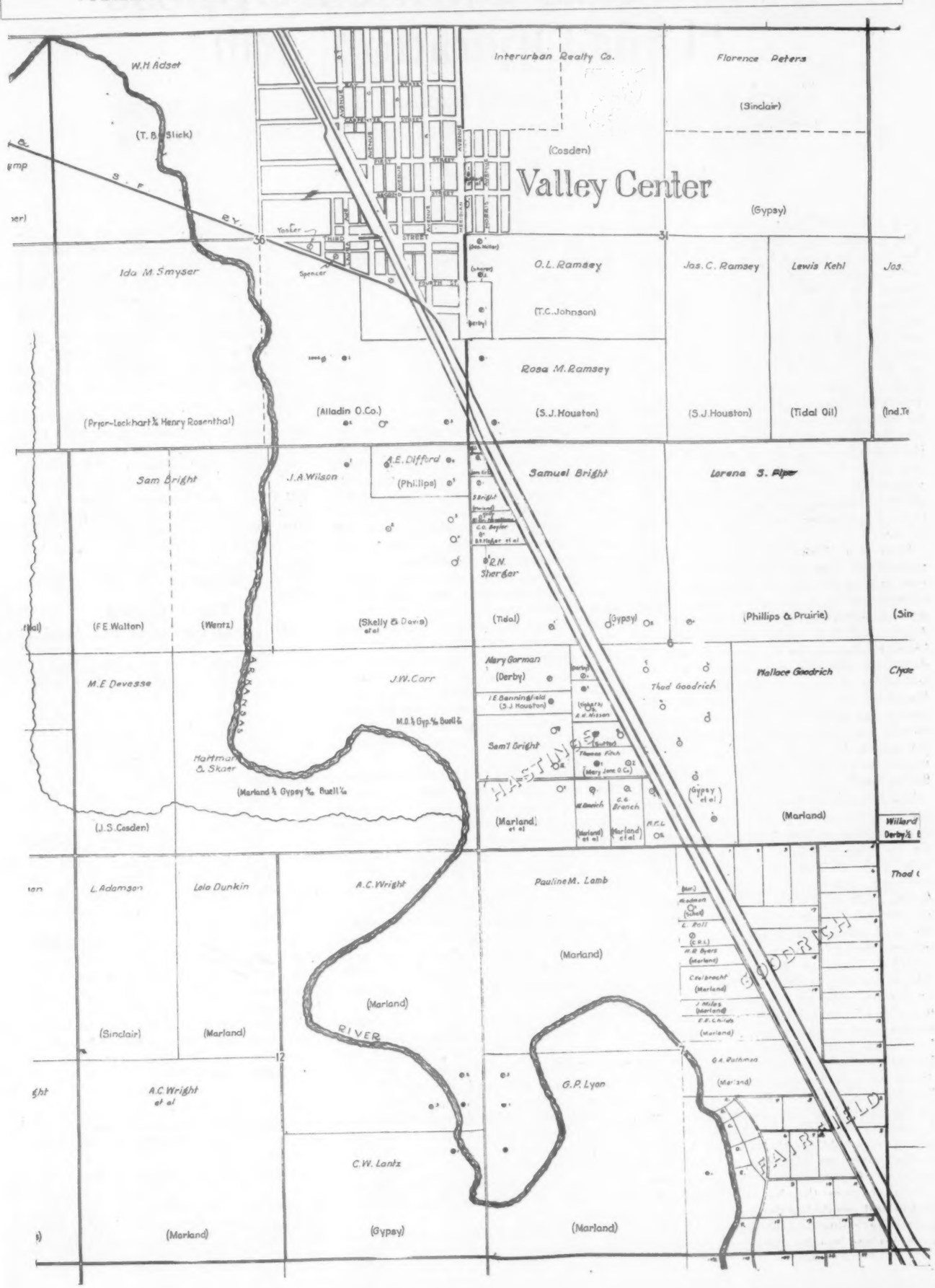
Another well which is creating considerable interest is the Empire Oil & Refining Company's Suderman 1, southeast corner, northeast Section 12-19-2e, Marion County, and 50 miles northeast of the Valley Center field. This well looks good for several hundred barrels of oil daily in the Wilcox sand at 2825½ feet. Empire Oil & Refining Company's well is not on the same trend as the Valley Center ridge or axis as the latter turns slightly more to the east when it gets that far north. It probably is on another high, which might extend to the southwest paralleling the Valley Center ridge.

Regardless of the many different beliefs and theories, Kansas is going to get a real testing out, and before long. Luck may favor the wildcatter and the pools anticipated may be uncovered easily and quickly—but if past history means anything, much drilling and time, including quite a number of costly failures, will be required. It is generally thought that the Valley Center field will yield about 10,000 barrels to the acre, hardly more. If the other fields that may be found do as well it is worth going after.

Core drills have played a very important part in the preliminary work in this district. A glance at an ownership map of Sedgwick, Harvey, McPherson, Marion counties will show the favored spots. Here are found some of the larger companies with

(Continued on page 52)

VALLEY CENTER AREA, SEDGWICK COUNTY, KANSAS



West Texas Oil Men Oppose "Unit Operation" Bill

Fourth Annual West Texas Oil Exposition at San Angelo passes resolution on pending law; air port opening feature of meeting

By H. H. KING
Staff Representative

SAN ANGELO, Texas—Oil men, representing concerns with production in various fields in the Southwest, attended the fourth annual West Texas Oil Exposition held here January 24 and 25, and the gathering went on record as being opposed to a bill now pending at Austin that provides for unit operation of flush oil fields developed in the future. The proposed legislation has been submitted with the approval of the Texas Railroad Commission, which would be empowered to enforce it. Approximately 500 registered at the meeting, and the formal opening of San Angelo's modern air port January 25 was an added feature on the program, with about 60 planes taking part in the ceremonies, including a number owned and piloted by oil men.

Only one dissenting vote was made against the San Angelo gathering of oil men passing a resolution stating their disapproval of the proposed oil and gas bill, and those present were invited to go to Austin and help fight the bill when a hearing comes up on the night of January 30. This bill was not prepared by the committee of Texas oil men appointed by the American Petroleum Institute, although the latter body will submit a bill shortly governing conservation and drilling and production curtailment. The resolution as approved by the San Angelo gathering follows:

"Be it resolved that it is the sense of the West Texas Oil Exposition assembled in convention at San Angelo, Texas, this the 25th day of January, 1929, that they look with disfavor and express their thorough disapproval of Section J of Article 6029 of House Bill 338 as now written and as now before house committee, said subdivision J of said proposed bill reading as follows:

"'(J) Upon its own motion or upon the petition of a majority of the operators or the operator or operators owning a majority of the acreage in the same oil or gas pool or in an area that appears from geological or other data to be underlaid by a common accumulation of oil or gas or both, to make and enforce orders binding alike upon the operators and royalty owners in said pool or area for the orderly development and operation of the separate holdings therein with a view to the prevention of waste and the furtherence of conservation in accordance with a program thereby established adjusting and regulating the exercise of the correlative rights and obligations of the operators and royalty owners therein that arise out of the nature and habits of oil and gas underground. This provision shall be cumulative of all other provisions of this act and of the conservation laws of this state.'"

Educational Features

The annual Exposition at San Angelo is fostered by the oil and gas division of the Board of City Development and its principal purpose is to take this means of showing members of the oil industry the appreciation of local citizens for the growth and trade expansion enjoyed by San Angelo and other West Texas points directly from oil activities. Through the efforts of the convention committee, headed by R. G. "Bob" Carr, independent operator, the business sessions during the fourth annual gathering carried a program of speeches of educational value to the visiting oil men, and the St. Angelus Hotel convention hall was crowded at each session.

Levi Smith, president of the Big Lake Oil Company, which developed the first oil production of any consequence in the West Texas district, presided as chairman of the business sessions. W. D. Holcombe, mayor and a true friend of the oil men, welcomed the visitors to the city that bears a slogan of being at the end of the rainbow.

Problems confronting the oil scouts covering the fields and wildcat sections of the West Texas district were outlined in a talk by Ford Turner, head of the San Angelo district land and scouting department, during the first business session. Turner explained the methods used by present day scouts in keeping their district and home offices informed on all important developments, and stressed the fact that scouts covering the West Texas district must be equipped with good cars because of the mileage covered each week and remoteness of the wildcats from supply bases.

Dr. F. B. Plummer, associate geologist of the bureau of economic geology of the University of Texas, lectured on "New Light on Buried Structure in West Texas," and explained the use of the various geophysical instruments now in use for locating subsurface conditions favorable for the accumulation of oil and gas. Lantern slides were used in connection with the talk to illustrate the different types of structures that may be located with the seismograph and torsion balance.

"Geology of Oil Refining" was the subject taken by Dr. C. N. Gould, of Norman, Oklahoma, director of the Oklahoma Geological Survey, in an address given at the opening of the second business session. Judge J. W. Hill, San Angelo attorney, delivered a talk on lease and land matters, and explained the basis of the controversy that has arisen over mineral rights under fee lands owned in West Texas by the University of Texas and also by the state.

The relation of aviation and the oil business was discussed in a paper prepared by Glenn Condon, of Tulsa, and director of public relations for the Skelly Oil Company. Mr. Condon complimented San Angelo in having obtained a modern airport. Earl Whitcomb, scout and lease man for the California Company, and vice president of the West Texas Oil Scouts Association, with headquarters at San Angelo, spoke on the duties of an oil scout.

Airport Opening

The formal opening of San Angelo's new air port, which has been named Cromwell field, after its owner, Carl G. Cromwell, who was the lone driller on the discovery well of the Big Lake field, and now superintendent of production for the Texon Oil & Land Company, was held on the afternoon of the last day of the oil meeting. A total of 77 planes registered at the air port during the day, and approximately $1250 in cash prizes were awarded to pilots taking part in the races and stunt flying events. The crash of a plane containing three men from Fort Worth on the previous day at the air port caused a large delegation of air planes from the latter city to cancel their proposed visit to San Angelo and take part in the opening ceremonies.

Fulfilling its reputation of being a hospitable city to oil men, San Angelo citizens provided an excellent program of entertainment for the visitors. Golf and trapshooting, with attractive prizes, were included on the program, while a barbecue was held at the Country Club, followed by athletic events. A dance was given as the closing event.

Bethlehem, Pennsylvania. — At a meeting of the board of directors of the Bethlehem Foundry & Machine Company held the latter part of January, the following officers of the company were elected: W. A. Wilbur, chairman of the board; J. George Lehman, president; Robert E. Wilbur, first vice-president; G. Ernest Finck, treasurer; and I. E. Krause, secretary.

Howard-Glasscock Proration Period Extended

Railroad Commission has under advisement raising production allowed; operators want two areas separated as to quota

By H. H. KING
Staff Representative

DALLAS, Texas.—Operators in the deep pay area of the Howard-Glasscock County field unanimously recommended that proration rules be extended for three months when the present period expires February 15, during a hearing before officials of the Texas Railroad Commission here Tuesday night. The majority of the operators favored an increase in allowable daily production from its present limit of 35,000 barrels daily, but no decision will be made by the commission regarding the increase until the matter has been thoroughly studied.

Lon A. Smith, a member of the commission, presided at the hearing, with R. D. Parker, Chief Supervisor, assisting.

A number of operators requested that the original deep pay area, which is practically confined to the Roberts ranch, and the Settles pool, which is located three miles to the west, be treated as separate fields in the future in dividing the allowable daily production, with each pool having a fixed quota.

Testimony was offered that the original deep pay area is now practically defined on all sides by a cordon of dry holes, while the Settles pool is producing from a 2200-foot horizon that is furnishing a much higher grade of oil, and that the bulk of the new production scheduled for the district will be from the Settles pool.

No opposition was made by operators to handling the two areas separately in fixing production quotas.

Operators voiced their disapproval of any swabbing of wells, owing to the presence of water in the original deep pay area, and the meeting went on record as approving a one-hour pumping test each month to determine potential production of the field for proration purposes. The present rules permit the swabbing of a new well for 12 hours to determine its potential; then future gauges are taken from pumping tests. The shooting of wells was also listed as dangerous in the Roberts section because of water troubles.

A letter from W. S. Farish, president of Humble Oil & Refining Company, regarding the boost in allowance being proposed for the district, and giving statistics on the current production of the West Texas district was read by Mr. Parker. Mr. Farish recommended that the field be prorated for another six months, and that production be curtailed because of approximately 80,000 barrels of oil going into storage daily in the West Texas district, with no desire on the part of his company to add to storage.

Field Production

Crude recovery from the lime horizons covered by proration enforcement rules in the Howard-Glasscock County area amounted to 3,078,673 barrels from the starting of proration on August 25, 1928, to January 16, 1929, according to figures furnished by E. E. Andrews, umpire. In addition to this total, about 250,000 barrels of deep pay production was produced in the field prior to the proration period, including about 230,000 barrels from Magnolia Petroleum Company's Dora Roberts 1 deep pay discovery well.

The field was credited with having 60 deep producers at the close of last proration period, ending January 16, and with a total production of 3,078,673 barrels during the first four and three-quarter months these wells show an average crude recovery of 51,311 barrels each. The large pumping wells being completed in the Henshaw-Settles section of the field will materially boost the output on the next monthly report, as only a few of these wells were completed in time to appear on the December-January monthly period.

Magnolia Petroleum Company's Roberts 1, which was completed October 24, 1928, in the 2900-foot horizon, flowed 217,400 barrels natural before going dead from reduced gas pressure caused by the drilling in of the second well to the deep pay by the Owen-Sloan Company early last February. This particular well was kept shut in most of the time after going dead until proration rules became effective last August, but continues to pump from 900 to 950 barrels daily, with no water showing. Owen-Sloan Company and Cosden & Company's 160-acre lease offsetting Magnolia Petroleum Company's discovery lease to the east, holds the record for the field on recovery per well, as four producers have produced 445,830 barrels of 26-28 gravity oil, which now commands a posted price of 65 cents per barrel, or 111,457 barrels per well. Magnolia Petroleum Company's total recovery from 12 deep wells during proration is 607,291 barrels, or 50,608 barrels per well.

Coyle-Concord Oil Company's single producer in the deep pay has recovered 89,094 barrels. Schermerhorn Oil Company, Tulsa, holds third position on total production, with an average of

CRUDE RECOVERY FROM DEEP PAYS IN HOWARD-GLASSCOCK COUNTY AREA

The following table furnished by Umpire E. E. Andrews shows the total crude production of each company with wells in the deep pays of the Roberts-Settles field located on the Glasscock-Howard County line, during the period that proration has been in effect:

Company—	Total Wells	Prod. Aug. 25 to Sept. 16	Wells	Prod. Sept. 16 to Oct. 16	Wells	Prod. Oct. 16 to Nov. 16	Wells	Prod. Nov. 16 to Dec. 16	Wells	Prod. Dec. 16 to Jan. 16	Total Production
Amerada Petroleum Corp.	.	...	.	...	1	25,174	1	17,194	1	32,986	75,354
American-Maracaibo Co.	.	...	.	...	.	...	1	64,116	3	79,986	144,102
Bristow & Merrick	1	16,388	1	32,772	1	49,130	2	52,406	3	50,310	201,006
Cosden & Co., Inc.	1	6,477	2	30,951	4	23,307	5	54,892	5	57,542	173,169
Coyle-Concord Oil Co.	.	...	1	4,742	1	31,094	1	25,075	1	28,183	89,094
Group One Oil Corp & Marland Prod. Co.	.	...	.	...	1	3,892	2	15,656	4	49,484	69,032
Louisiana Oil Ref. Corp.	.	...	.	...	.	...	1	14,790	2	32,151	46,941
Magnolia Pet. Co.	4	74,161	6	146,358	7	146,968	10	123,296	11	116,508	607,291
Marland Prod. Co.	.	...	.	...	.	...	1	2,037	2	16,557	18,594
Moody Corp (Superior)	5	56,285	5	82,962	7	54,355	9	78,673	12	141,595	413,870
Owen-Sloan Co. (Laurel) & Cosden & Co., Inc	3	45,058	3	85,560	4	113,448	4	107,239	4	94,525	445,830
Schermerhorn Oil Co.	1	30,408	2	77,725	2	126,618	4	122,950	5	86,046	443,747
Sprague Oil Co.	.	...	1	16,889	1	21,500	2	31,597	2	21,502	91,488
Sun Oil Company	2	5,606	2	60,570	3	55,606	3	58,180	4	68,247	248,209
Taylor-Link Oil Co.	.	...	.	...	.	...	1	5,456	1	5,490	10,946
Totals	17	234,383	23	538,529	32	651,092	47	773,557	60	881,112	3,078,673

88,749 barrels each from five wells. Amerada Petroleum Corporation and Rycade Oil Corporation's first well drilled is credited with having produced 75,354 barrels up to January 16, and since then these interests have completed about 6000 barrels of new production on swabbing tests, with a total of six wells on production or in process of completion.

Potential 80,000 Barrels

According to Umpire Andrews, the combined estimated potential daily production of the deep producers on January 16 was about 80,000 barrels, since the allowable production of these wells is limited to 35,000 barrels daily the large producers are prorated to about 60 per cent. of the potential. Small pumpers are not restricted on production to any appreciable extent.

Absence of any great volume of gas in the field and low rock pressure has made flowing wells a thing of the past, and only a few wells have flowed in the field since last September, then only for a brief period. However, the field offers exceptionally good pumpers, and a daily recovery of 1500 barrels from long stroke pumps and three-inch tubing is not unusual, with some wells making up to 2000 barrels daily on pump.

The most active drilling section is in the Henshaw-Settles area, where most of the oil tests above 32 gravity and brings a posted price of 80 cents per barrel at the well, and according to Umpire Andrews a daily output of 11,000 barrels from pumping wells is in sight for this area. Cosden & Company and the Louisiana Oil Refining Corporation are the only purchasers paying 80 cents per barrel for this higher gravity production, and Cosden Pipe Line Company is running it to Cosden & Company's refinery storage or loading that obtained by Louisiana Oil Refining Corporation on tank cars at 10 cents per barrel.

Efforts of the Humble Pipe Line Company to discontinue all crude purchases in the Howard-Glasscock County area beginning early last week has disturbed the crude market situation, and producers affected by this order have been partially successful in locating a new market outlet. Shell Pipe Line Company has increased its runs and purchases, having averaged 9350 barrels daily last week, and the Great West Pipe Line Company, which is to serve a 5000 barrel skimming plant just completed east of Big Spring with a six-inch line connecting to the heart of the field, began running oil previously contracted for from Owen-Sloan Company (Laurel Oil & Gas Company) and Cosden & Company, and also from the Moody Corporation, which is owned by the Superior Oil Producing Company.

Bignell Heads A. I. M. E. in Mid-Continent

L. G. E. BIGNELL

Tulsa.—In its meeting here January 28, the Mid-Continent section of the American Institute of Mining & Metallurgical Engineers elected L. G. E. Bignell chairman; R. R. Brandenthaler, Harold C. George and William K. Whiteford, vice chairmen; and Harry H. Power secretary-treasurer.

Members of committees of the organization were elected also, as follows: executive committee—Paul Ruedemann, Earle S. Porter, H. B. Goodrich, and E. O. Bennett; and program committee —Paul Ruedemann, W. K. Whiteford, R. R. Brandenthaler and E. O. Bennett.

Natural Gas Convention Committees Named

New York.—In line with plans for the coming convention of the Natural Gas Department of the American Gas Association, to be held in Kansas City, May 6, 7, 8, and 9, the following committees have been named:

Program Committee

A. W. Leonard, Devonian Oil Company, Tulsa, Chairman.

Entertainment Committee

T. J. Strickler, Kansas City Gas Company, Kansas City, Chairman; T. R. Weymouth, Oklahoma Natural Gas Corporation, Tulsa; L. B. Denning, Lone Star Gas Company, Dallas; Paul Ford, Kansas City Gas Company, Kansas City.

Exhibition Committee

F. M. Rosenkrans, Gas Service Company, Kansas City, Chairman; W. E. Derwent, George D. Roper Corporation, Rockford, Ill.; E. F. Schmidt, Lone Star Gas Company, Dallas; H. Leigh Whitelaw, American Gas Products Corporation, New York; Cal Zesky, Pittsburgh Equitable Meter Company, Kansas City; C. W. Berghorn, Director of Exhibits, American Gas Association, New York.

Transportation Committee

Arthur Booth, Pittsburgh Supply Company, Pittsburgh, Chairman.

Judging from the large number of requests that have been received from manufacturers for exhibit space, the exhibit will be a record-breaker. All natural gas men are looking forward to this big meeting and it is confidently expected that the attendance will be the largest in the history of the natural gas industry. A number of important matters are scheduled for this meeting and S. W. Meals, chairman of the Department, is urging all natural gas men to be there.

Turner on Conservation Board Committee

Washington—Scott Turner, director of the United States Bureau of Mines, has been designated by Secretary of Commerce Whiting to represent the Department of Commerce on the advisory committee of the Federal Oil Conservation Board.

Following the designation by the president of the United States, on December 19, 1924, of the Secretary of War, Navy, Interior and Commerce as the Federal Oil Conservation Board, a technical and advisory committee, made up of one member from each of the departments named, was appointed. This is the second change in the personnel of the committee since its formation. The close relationship of the Bureau of Mines with the petroleum industry had resulted in the assemblage of a considerable amount of informative material, which was made available to the board, and much of this matter was incorporated in the first, or preliminary report, of the Federal Oil Conservation Board, which summarized the technical and economical problems confronting the petroleum industry. The report suggested measures for the controlling of flush production of oil, and also dealt with the government's own problems on public and Indian lands containing oil reserves.

Because of the extended studies made by the Bureau of Mines in the production of oil from coal, lignite, and shale it was possible for the bureau to furnish much material for report No. 2, of the Federal Oil Conservation Board, issued January, 1928, which dealt with possible petroleum substitutes and the possible development of the shale oil industry.

The petroleum engineers and analysts of the Bureau of Mines have for some time been engaged in the preparation of material to be submitted for inclusion in the third report of the Federal Oil Conservation Board, which will deal principally with the subject of petroleum research in foreign countries.

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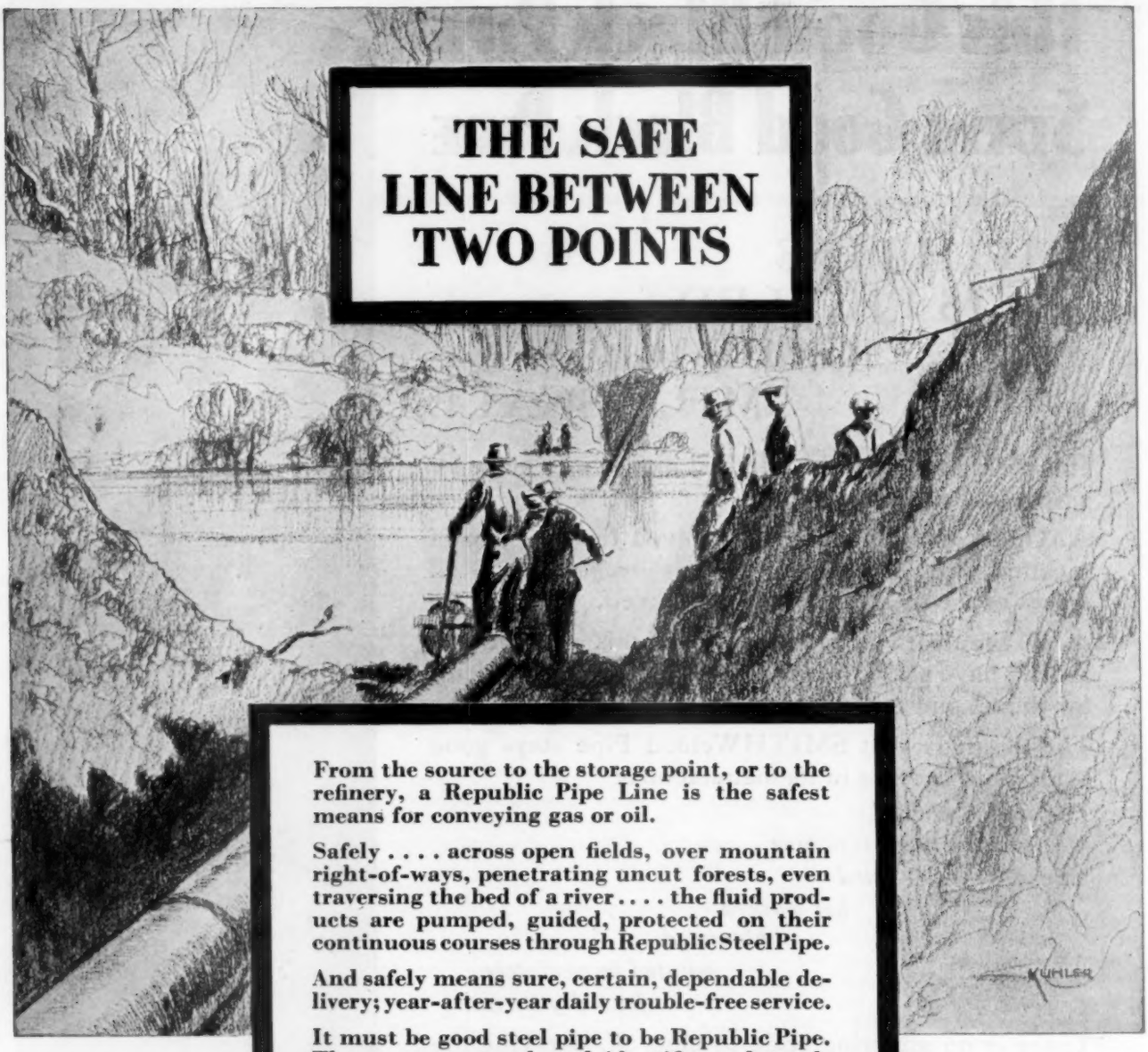

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The OIL WEEKLY

Member Audit Bureau of Circulations

VOLUME 52, NO. 7

FEBRUARY 1, 1929

Edited Weekly at Houston, Texas

SPENCER W. ROBINSON, *Editor*

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Copyright, 1929

Published Weekly
by
GULF PUBLISHING COMPANY

OFFICE OF PUBLICATION
3301 Buffalo Drive, Houston, Texas

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FORT WORTH: 203 W. T. Waggoner Bldg., H. H. King, Manager.

Issued Friday of each week. Single copies 10 cents. Subscription price: Domestic $1.00 a year, Foreign $1.00 a year. Subscription restricted to those engaged in the producing and pipe line branches of the oil business or the manufacture and distribution of oil field supplies. Advertising rates on application.

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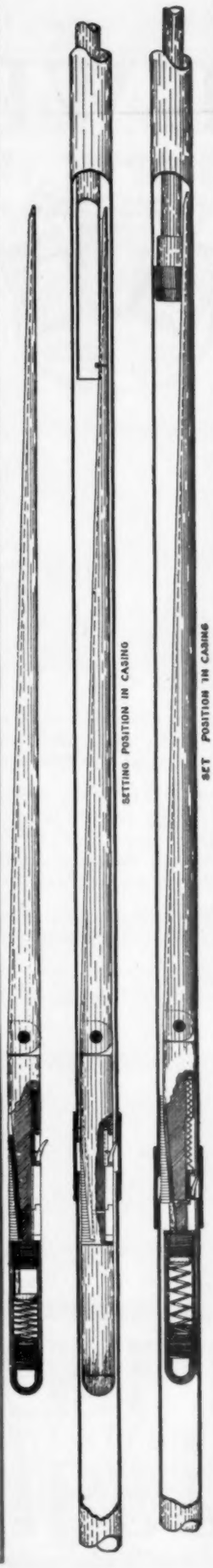

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Markets--Production--Crude Prices

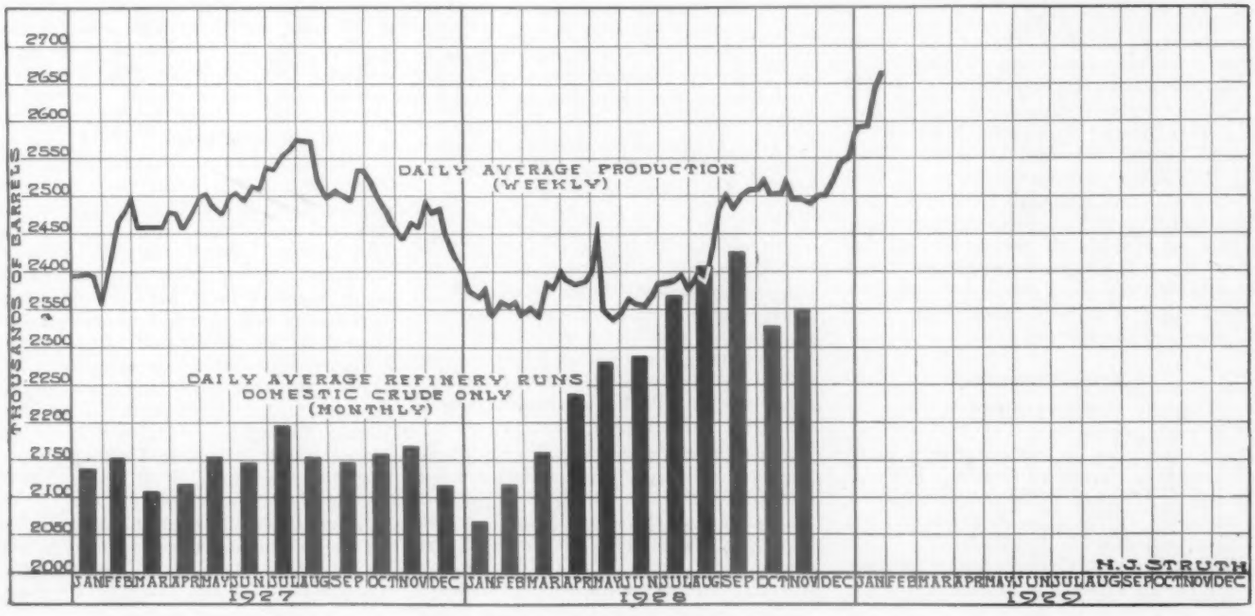
H. J. STRUTH, *Staff Economist, Houston, Texas*

Further Downward Revision of Crude Prices Anticipated

FOLLOWING closely upon the announcement in last week's issue of THE OIL WEEKLY, that a general reduction in crude prices was imminent, came a barrage of telegrams from practically every major field in the United States and Canada announcing cuts which ranged from two to 35 cents per barrel. With the receipt of daily average production figures for the week ending January 19, and the projection of their results upon the general crude situation, it became certain that the crux had been reached and the industry was due to absorb a loss on the excessive above-ground supply of petroleum. For a good many weeks, attention has been directed in this section to the danger that confronted the entire industry. Even at the close of last year, it became evident that the crude market was getting top-heavy under the burden of overproduction, and drastic action appeared to be the only solution to prevent further complications. This situation kept getting worse each week until January 22, when A. P. I. figures carried the price barometer well beyond the critical point which definitely indicated an immediate adjustment of market values.

While the industry cannot afford to absorb such losses as are indicated by the recent decline in market values, it is evident that such drastic action is the only sound and workable method by which to affect long desired results. Proration is undoubtedly destined to prove a valuable aid in solving the problem of overproduction, but as yet it has not been seriously accepted by the industry as a whole and has thus fallen far short of the real accomplishment predicted for it. After all, it is difficult to find any substitute for the economic law of supply and demand. Unfortunately, this law exempts no one, and the fellows who carried out their part to prevent overproduction must share the ill effects brought about by those who disregarded the counsel of their saner brothers. Nor has the end of the present evil influence been seen. The recent reductions are a warning to the industry to mend its ways, but it is not believed that one reduction will entirely solve the problem; it will undoubtedly be followed by another mark-down at an early date. In this connection, it is also apparent now that California light oils and all Pennsylvania grade crudes will be reduced proportionately, and possibly within the next few days. The situation in California demands immediate correction and the only solution is an immediate cut in the price of light crudes. The barometer for California indicates now that light crudes must be reduced or the situation there will become a decided menace to the entire industry. It is also apparent that the present prices in effect for Pennsylvania crudes are far too high in relation to the refined oil market, and now since there will probably be further shading of refined oil prices, a cut in those grades is imminent. As a matter of fact, the recent advances made in Pennsylvania crude have been somewhat overdone. The Appalachian crude situation has shown decided strength for some time, but the economic limit of value for these crudes

DOMESTIC PRODUCTION AND REFINERY RUNS



DETAILS OF CRITICAL FIELDS

Pool	Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Production Per Well	Rigs Up	Wells Drilling
WEST TEXAS—								
Hendrick	504	2,800,250	5,556	518	175,800	*339	12	42
Church & Fields	189	203,465	1,077	187	26,290	141	..	..
Gulf - McElroy.	70	56,225	803	70	12,895	186	1	1
Yates	292	1,926,520	6,598	291	74,520	*256	5	8
Total	1,055	4,986,460	4,727	1,066	289,505	272	18	51
TEXAS PANHANDLE—								
Hutchinson Co..	1,140	549,320	482	1,014	27,260	27	5	24
Gray County ..	319	133,605	419	309	23,765	77	8	43
Carson County .	183	60,245	329	159	5,880	37	5	14
Wheeler County.	44	14,645	333	35	780	22	7	15
Moore County .	10	6,125	612	8	3,385	423	3	6
Total	1,696	763,940	450	1,525	61,070	40	28	102
OKLAHOMA—								
Seminole	1,651	2,135,832	1,293	1,337	285,235**	213	48	234
St. Louis	350	364,524	1,041	300	129,067	430	22	60

* Production partially pinched.
**Mission field partially pinched.

was reached some time before the last increase of January 4. This means that Pennsylvania is due to a downward adjustment of at least 25 to 35 cents a barrel, immediately.

Effect of Cuts

It is still too early to measure the results of the recent market adjustment, but it is believed unlikely that the one cut will have any material effect upon the general situation. Undoubtedly, it will have some influence upon wildcatting, but a check-up of new operations in the various flush areas reveals that a considerable amount of new oil is destined to come in during the next few weeks at least. Last week there was another gain in the national output of 18,900 barrels. This brings the total daily average up to 2,663,100 barrels, the highest mark ever reached in the history of the industry. California showed a gain of 15,000 barrels, most of which is credited to Santa Fe Springs and Seal Beach. Texas registered a total gain for the week of 10,800 barrels which was offset by declines amounting to 1350 barrels, making a net gain for the state of 9450 barrels. West Texas contributed a gain of 4700 barrels; Panhandle, 1650; Southwest Texas, 1800; and Texas Gulf, 2650 barrels. There was no change in the total for Oklahoma, although it is noted that Little River and Maud showed gains of 3600 and 3450 barrels, respectively. Kansas and North Louisiana showed minor gains, while declines were registered in Louisiana Gulf Coast, Arkansas, Mountain States and the Eastern area.

Price Schedules

Magnolia Petroleum Company was the first company to meet The Carter Company's reduction in prices. Its schedule is the same as Carter Oil Company in Oklahoma and Kansas with the exception it has a flat rate of 60 cents per barrel for all oil under 26 gravity. Prairie Pipe Line Company met the Carter schedule effective January 25 with the exception that a flat rate of 60 cents per barrel was posted for all gravity below 25 degrees Baume. Carter Oil Company did not post a price for below 25 gravity.

The delay in all of the major purchasing companies in meeting the new price schedule caused some comment. However on the second day all of the major purchasers fell in line with the new reductions. These included Sinclair Crude Oil Purchasing Company, Texas Pipe Line Company, Marland Oil Company, Consolidated Pipe Line Company, and Gypsy Pipe Line Company. The few remaining purchasers were expected to announce their meeting of the price schedule at any time.

Kansas has been showing an increased recovery. Oklahoma until a few weeks ago was declining, but the Seminole district took a spurt which carries it close to 300,000 barrels per day. During the last part of the week it was slumping again, but this is not expected to be permanent. There are four or five pools in the two states in which sufficient drilling is under way to show an increased recovery shortly. Early in February Seminole is expected to produce substantially over the 300,000 barrel figure. At this time the Maud field should be showing a higher recovery and the 70 odd drilling wells at Mission are scheduled for completion.

There were several important developments during the past week from a field standpoint. The Allen pool was at least temporarily removed from the position of a large factor, due to dry holes. The Mission field yielded four more failures, further reducing its producing limits, and indications are that a number of other disappointments will be forthcoming from this area.

Since the posting of the old price schedule on July 26, 1928, there has been a large decline in the demand for refined products and at the same time an increase in crude production. This condition has caused the storage of considerable oil, and with production expected to increase storage figures were expected to reach 50,000 barrels daily and perhaps more in Oklahoma and Kansas.

The cut is seen as a move to discourage the drilling of wildcat tests. Despite urgent warnings to reduce the amount of wildcatting, operators have failed to restrict their operations. This was perhaps a strong factor in the purchasing companies announcing a reduction in prices. The decreased prices will not slow up drilling in Oklahoma in proven areas such as Seminole and other active spots, but a slump in wildcat activity is anticipated.

Refined Market

The refined market in Group 3 failed to show an immediate reaction as a result of the crude price changes. It seems to be waiting on a readjustment of the tank wagon prices, which is expected to occur. Not much gasoline is selling due to unfavorable weather. U. S. motor gasoline has an average price of 7 cents a gallon. 60-62, 400 end point grade, is at 7½ cents, with 64-66, 375 end point, bringing an average of 8 cents per gallon.

Natural gasoline was a little stronger than last week, Single A was being quoted at 7½ cents, with double A at 6½ to 6⅝ cents, with BB grade at 5½ to 5⅝ cents, and C at 5¼ cents.

There was no change in prices of other products, but some effect is expected to be shown by gas oil and fuel oil.

West Texas Not Cut

Crude prices in the West Texas district were not disturbed during the downward revision of prices posted by all purchasers January 24 and 25 in the Mid-Continent district, although the former district will be directly affected because the lowering of prices on other fields serves to wipe out the price differential that has enabled sulphur contaminated crudes from West Texas to penetrate distant markets. Excepting the Big Lake field production, which is being sold on life of property contract at the average Mid-Continent gravity scale price, the bulk of the oil produced in the West Texas district commands a posted price of 65 cents per barrel. Production has been crowding market outlets, with three major pipe line companies storing oil in the district, and any appreciable curtailment of this market outlet will have a tendency to weaken the general price structure.

Due to the efforts of the Humble Pipe Line Company to discontinue running oil for purchase in the deep pay area of the Howard-Glasscock County field, this section of the West Texas district is not adequately served by a market, but the starting up of three new refineries near Big Spring will shortly take up the slack caused by the withdrawal of this buyer. This particular area was enjoying a firm market situation until deprived of one of its principal market outlets on short notice. Owing to a high cold test registered from fuel made from crude produced in this area, it is less desirable among the major companies.

Texas Panhandle operators were included in the price cutting last week, and under the new schedule of prices Carson-Hutchinson - Wheeler County producers

(Continued on page 60)

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1927	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
October	782,300	105,100	497,900	138,400	51,300	100,450	113,600	73,250	629,000	2,491,300	77,230,000
November	766,900	106,650	501,750	138,100	49,400	97,850	114,900	75,050	623,850	2,474,450	74,233,500
December	720,700	106,150	531,650	138,500	47,200	94,950	111,250	77,150	624,600	2,452,150	76,017,050
1928											
January	675,450	108,300	523,300	125,450	45,250	90,050	109,600	77,000	617,100	2,371,500	73,516,500
February	664,450	110,550	538,750	115,800	45,300	88,250	104,850	75,550	614,750	2,358,250	68,388,850
March	646,850	112,250	575,850	119,900	44,400	85,600	102,150	78,700	617,450	2,383,150	73,877,650
April	620,450	112,150	617,850	118,850	46,900	83,450	107,000	78,500	613,550	2,398,700	71,961,100
May	610,100	108,750	561,450	129,850	43,600	91,250	112,100	82,200	630,900	2,370,200	73,476,300
June	594,850	105,200	554,400	135,400	42,350	102,850	109,300	82,400	643,400	2,370,150	71,104,500
July	587,150	102,750	597,250	133,650	42,150	90,700	113,400	80,400	644,700	2,392,150	74,156,600
August	656,350	102,200	604,000	130,200	40,200	87,500	113,300	77,700	634,150	2,445,600	75,534,600
September	724,850	99,750	604,150	129,500	39,050	84,700	112,550	78,850	631,650	2,505,050	75,151,500
October	741,350	97,900	598,550	129,950	38,800	83,550	114,000	83,300	624,450	2,511,850	77,867,800
November	715,750	96,600	586,350	135,100	38,600	83,000	109,700	81,150	653,050	2,499,300	74,978,900
December	710,610	97,110	603,370	14,010	37,330	81,330	113,480	74,550	697,790	2,557,900	79,295,150
1929											
Jan. 5	719,750	97,100	615,250	136,400	36,400	80,200	113,250	78,100	714,600	2,591,050	18,137,350
Jan. 12	717,950	97,150	618,400	137,500	36,650	79,150	112,500	72,550	721,800	2,593,650	18,155,250
Jan. 19	723,650	97,150	630,950	138,250	36,300	78,250	111,750	74,600	753,300	2,644,200	18,509,400
Jan. 26	723,650	97,350	637,750	139,900	36,350	78,100	111,600	70,100	768,300	2,663,100	18,641,700
Increase	.....	200	6,800	1,650	50	.....	.....	.....	15,000	18,900	132,300
Decrease	.....	.....	.....	.....	.....	150	150	4,500	.....	.....	.....

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	Jan. 26	Jan. 19
Carson County	5,850	5,650
Gray County	23,650	23,200
Hutchinson County	27,500	27,700
Wheeler County	800	700
Others	3,400	2,300
Total	61,200	59,550

NORTH TEXAS

Archer County	17,900	18,000
Burkburnett	9,200	9,300
Electra	13,500	13,700
Iowa Park-KMA	6,400	6,000
Montague and Cooke Counties	9,750	9,850
Wilbarger	28,850	29,350
Others	550	550
Total	86,150	86,750

WEST CENTRAL TEXAS

Brown County	9,300	9,350
Callahan County	3,600	3,750
Coleman County	3,300	3,500
Eastland-Desdemona	6,750	6,800
Jack County	1,750	1,900
Palo Pinto County	400	400
Shackelford County	11,700	11,350
Stephens County	6,750	7,000
Throckmorton County	700	700
Young County	7,800	7,750
Others	700	700
Total	52,750	53,200

WEST TEXAS

Crane-Upton Counties	49,750	49,800
Crockett County	2,500	2,300
Howard County	40,800	38,900
Jones County	7,100	6,400
Mitchell-Scurry Counties	2,650	2,700
Pecos County	73,050	74,800
Reagan County	19,200	18,900
Winkler County	176,900	173,400
Others	1,500	1,550
Total	373,450	368,750

EAST CENTRAL TEXAS

Boggy Creek	2,500	2,600
Corsicana-Powell	9,200	9,400
Currie	500	500
Mexia	6,000	6,000
Nigger Creek	600	600
Richland	500	500
Wortham	1,400	1,400
Total	20,700	21,000

SOUTHWEST TEXAS

Dale	750	700
Laredo District	11,500	11,000
Luling	13,000	13,100
Lytton Springs	1,100	1,000
Somerset	650	650
Salt Flat	15,300	14,000
Others	1,200	1,850
Total	43,500	41,700
T'tl Tex. (Outside Gulf Coast)	637,750	630,950

TEXAS GULF COAST

Barbers Hill	2,000	2,100
Batson	1,300	1,300
Big Creek	4,000	2,600
Blue Ridge	4,700	5,000
Boling	2,300	2,450
Damon Mound	950	900
Goose Creek	6,250	6,200
Hull	10,100	9,700
Humble	5,000	5,300
Orange County	3,100	3,200
Pierce Junction	12,100	10,700
Raccoon Bend	1,900	1,500
Saratoga	950	900
Sour Lake	2,800	3,000
South Liberty	8,650	10,000
Spindle Top	34,250	33,400
Sugar Land	7,650	7,700
West Columbia	7,100	7,200
Others	3,500	2,800
Total	118,600	115,950
Texas Total	756,350	746,900

OKLAHOMA

Braman	3,850	3,900
Logan County	14,950	16,500
Blackwell	4,100	4,000
Hubbard	2,150	2,150
Thomas	950	950
Tonkawa	11,200	11,300
Garber	6,300	6,400
Burbank	23,300	23,300
Osage (outside Burbank)	26,200	26,800
Cushing	20,750	21,100
Yale Jennings	7,750	7,750
Davenport	1,650	1,650
Bristow Slick	19,050	19,150
North Okmulgee	14,250	14,250
Lyons Deaner	8,000	8,050
Cromwell	8,100	8,100
Papoose	3,500	3,550
Wewoka	5,400	5,400
Seminole	40,400	40,400
Bowlegs	42,000	43,500
Searight	8,550	9,000
Little River	100,100	96,500
Earlsboro	68,050	70,450
Duncan District	7,300	7,350
Graham	4,500	4,550
Fox	1,500	1,500
Healdton	13,200	13,250
Hewitt	8,750	8,750
Scholem Alechem	13,900	13,950
Pearson	1,650	1,650
St. Louis	128,500	129,700
Allen	27,900	27,300
Maud	31,300	27,850
Oklahoma City	5,700	5,750
Mission	900	800
Others	38,000	37,100
Total	723,650	723,650

CALIFORNIA

Santa Fe Springs	165,000	153,000
Long Beach	181,000	182,500
Huntington Beach	49,000	49,000
Terrance	15,000	15,000
Dominguez	10,000	10,000
Rosecrans	6,500	6,500
Inglewood	27,000	27,000
Midway-Sunset	73,000	73,000
Ventura Avenue	55,000	55,000
Seal Beach	32,000	28,000
Elwood-Goleta	18,500	...
Kettleman Hills	4,000	...
Others	132,300	154,300
Total	768,300	753,300

KANSAS

Greenwood County	22,800	23,000
Florence-Covert	900	900
Peabody-Ebling	3,250	3,250
Eldorado-Towanda	12,400	12,400
Augusta-Fox Bush	2,950	2,950
Rainbow Bend	1,100	1,100
Russell	3,450	3,400
Churchill	7,500	7,450
Oxford	6,250	6,250
Sedgewick	7,250	7,450
Others	29,500	29,000
Total	97,350	97,150

NORTH LOUISIANA

	Jan. 26	Jan. 19
Homer	4,050	4,050
Haynesville	5,550	5,350
Caddo Light	9,050	9,050
Caddo Heavy	2,800	2,800
DeSoto-Red River	4,050	4,100
Elm Grove	600	600
Bellevue	750	750
Cotton Valley	3,250	3,250
Urania	5,750	5,850
Pleasant Hill	500	500
Totals North Louisiana	36,350	36,300

LOUISIANA GULF COAST

Bayou Boullion	400	400
East Hackberry	57,50	6,150
Edgerly	850	800
Evangeline	800	800
Lockport	3,900	4,150
Sorrento	1,100	1,100
Sulphur Dome	2,850	3,200
Sweet Lake	800	800
Vinton	4,000	4,100
Others	750	800
Total Louisiana Gulf Coast	21,300	22,300
Louisiana Total	57,650	58,600

ARKANSAS

El Dorado	4,850	4,900
Champagnolle	10,950	10,600
Smackover Light	6,900	6,900
Smackover Heavy	51,450	51,750
Stephens	1,000	1,000
Nevada	1,300	1,400
Lisbon	1,500	1,600
Others	100	100
Total	78,100	78,250

MOUNTAIN STATES

WYOMING

Salt Creek	29,600	32,300
Grass Creek	2,100	2,350
Elk Basin	800	1,000
Big Muddy	2,350	2,500
Lost Soldier	3,450	3,650
Rock River	2,300	2,400
Lance Creek	300	350
Oregon Basin	2,900	2,050
Others	6,300	6,300
Total	50,100	52,900

MONTANA

Cat Creek	1,500	1,500
Sunburst	6,750	7,100
Pondera	2,900	2,850
Others	....	....
Total	11,150	11,450

COLORADO

Moffats (Craig)	1,150	1,000
Fort Collins	2,400	2,750
Florence	1,100	1,150
Others	2,200	2,200
Total	6,850	7,100

NEW MEXICO

Table Mesa	....	550
Artesia	1,000	1,050
Hogback	500	500
Rattlesnake	400	950
Others	100	100
Totals	2,000	3,150
Totals Mountain States	70,100	74,600

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.)	111,600	111,750

PRODUCTION SUMMARY

East of Rockies	1,824,700	1,816,300
Total U. S.	2,663,100	2,644,200

CRUDE OIL PRICE QUOTATIONS

(Revised to January 29, 1929)

CRUDE PRICE CHANGES

Effective January 24, Carter Oil Company reduced Oklahoma and Kansas crudes from 1 to 32 cents a barrel, establishing a three-cent differential for each degree above 32 gravity and a six-cent differential for each degree below 32. On the same day Magnolia Petroleum Company posted reductions on all grades of Oklahoma, Kansas and Texas crudes, with exception of Panhandle grades, establishing a differential of three cents for each degree above 32 to 32.9 gravity and a differential of 6 cents for each degree below 32. Prices for Panhandle crude, Carson and Hutchinson Counties under 32, 72 cents, with a three-cent differential for each degree bginning with 32 to 32.9 up to 44 gravity. Wheeler County, under 30, posted at 70 cents, with differential of three cents for each degree from 32.9 to 44 and above. Gray County, differential of six cents each degree beginning with 29.9 to 32.9 gravity and three cents from 33 to 44 and above.

Effective January 25, Prairie Oil and Gas Company met reductions of Carter Oil Company, with exception that below 25 gravity was given a flat rate of 60 cents a barrel.

Effective January 25, Ohio Oil Company reduced Elk Basin and Grass Creek, Wyoming, crudes 12 cents a barrel; Lance Creek, 10 cents. Big Muddy was reduced 5 cents and Rock Creek 15 cents. On the same day Ohio Oil Company posted reductions of 10 cents a barrel for Illinois, Princeton, Plymouth, Lima-Indiana and Western Kentucky crudes, while Wooster grade was reduced 15 cents a barrel.

Effective January 25, Joseph Seep Agency reduced Corning crude 15 cents a barrel.

Effective January 26, Magnolia Petroleum Company posted reductions on Pine Island, Haynesville, Bull Bayou, Louisiana, and El Dorado, Arkansas, light crude, including the Rainbow, Arkansas, pool. Below 28, 78 cents, with a differential of six cents for each degree from 28 to 28.9 to 32.9, and a differential of three cents beginning with 33 to 33.9 up to 44 and above. Chalk field, Howard County, and Mitchell County, Texas, grades posted at 65 cents a barrel. On the same day, Standard Oil Company of Louisiana announced cuts ranging from 3 to 32 cents a barrel for Caddo, Homer, Haynesville, Bull Bayou, Crichton, De Soto, and El Dorado crudes. Bellevue grade was cut 5 cents, to $1.20 a barrel. Cotton Valley, below 36 was unchanged at 75 cents a barrel, while grades above 36 were reduced on same basis as Caddo grade.

Effective January 26, Magnolia Petroleum Company posted a reduction of 10 cents a barrel on all Grade B Gulf Coast crudes. This cut was met on the same day by the Sun Company.

Effective January 26, Canadian crudes were reduced 10 cents a barrel, making new Petrolia price $1.90 and Oil Springs, $1.97.

Effective January 29, Atlantic Oil Producing Company and Louisiana Oil Refining Company posted reductions in the price of Stephens, Ark., crude of 5 cents a barrel, making 32 and above 90 cents and below 28, 70 cents.

Effective January 29, Joseph Seep Agency reduced Ragland crude 35 cents a barrel, making new price 60 cents.

EASTERN STATES

(Effective January 25, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$4.10
Brandford District Oil in National Transit Lines (Pennsylvania)	4.10
Penna Grade Oil in National Transit Lines (Pennsylvania)	4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.45
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.75
Somerset Oil in Cumberland Pipe Line lines (Kentucky)	1.75
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (Effective Jan. 29, 1929)	.60
Keister (Pennsylvania)	1.20

CENTRAL STATES

(Effective January 25, 1929)

Posted by Ohio Oil Co.

Illinois	1.45
Indiana	1.27
Lima	1.50
Plymouth	1.18
Princeton	1.45
Waterloo	1.25
Wooster	1.62

WESTERN KENTUCKY

(Effective January 25, 1929)

All grades	1.53

MID-CONTINENT

(Effective January 25, 1929)

Carter Oil Company, Gulf Pipe Line Company, Sinclair Pipe Line Company, Prairie Oil and Gas Company and The Texas Company.

25 to 25.9gravity	.66
26 to 26.9 gravity	.72
27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 and above	1.44

MID-CONTINENT

(Effective January 24, 1929)

Magnolia Petroleum Company

Under 26	.60
26 to 26.9 gravity	.65
27 to 27.9 gravity	.70
28 to 28.9 gravity	.75
29 to 29.9 gravity	.80
30 to 30.9 gravity	.90
31 to 31.9 gravity	1.00
32 to 32.9 gravity	1.08

From 33 to 44 gravity and above, Magnolia Petroleum Company prices are the same as those of Carter Oil Company.

PANHANDLE

(Effective January 24, 1929)

GRAY COUNTY

(Humble Oil & Refining Company, Magnolia Petroleum Company, Gulf Pipe Line Company and Sinclair Pipe Line Company).

Below 29 gravity	.69
29 to 29.9 gravity	.75
30 to 30.9 gravity	.81
31 to 31.9 gravity	.87
32 to 32.9 gravity	.93
33 to 33.9 gravity	.96
34 to 34.9 gravity	.99
35 to 35.9 gravity	1.02
36 to 36.9 gravity	1.05
37 to 37.9 gravity	1.08
38 to 38.9 gravity	1.11
39 to 39.9 gravity	1.14
40 to 40.9 gravity	1.17
41 to 41.9 gravity	1.41
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.51
44 and above	1.56

WHEELER COUNTY

(Humble Oil and Refining Company and Magnolia Petroleum Company)

Below 30 gravity	.70
30 to 30.9 gravity	.76
31 to 31.9 gravity	.82
32 to 32.9 gravity	.88
33 to 33.9 gravity	.91
34 to 34.9 gravity	.94
35 to 35.9 gravity	.97
36 to 36.9 gravity	1.00
37 to 37.9 gravity	1.03
38 to 38.9 gravity	1.06
39 to 39.9 gravity	1.09
40 to 40.9 gravity	1.12
41 to 41.9 gravity	1.15
42 to 42.9 gravity	1.18
43 to 43.9 gravity	1.21
44 and above	1.24

CARSON-HUTCHINSON COUNTIES

(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company)

Below 32 gravity	.72
32 to 32.9 gravity	.78
33 to 33.9 gravity	.81
34 to 34.9 gravity	.84
35 to 35.9 gravity	.87
36 to 36.9 gravity	.90
37 to 37.9 gravity	.93
38 to 38.9 gravity	.96
39 to 39.9 gravity	.99
40 to 40.9 gravity	1.02
41 to 41.9 gravity	1.05
42 to 42.9 gravity	1.08
43 to 43.9 gravity	1.11
44 and above	1.14

WEST TEXAS

(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*

Crane-Upton, Crockett, Pecos and Winkler Counties, all grades	.65

*Gulf does not post in Winkler County; Magnolia posts in Crane, Upton and Winkler Counties and that part of Glasscock not included in the Chalk field. The Marland Company posts only in Crane, Upton and Crockett Counties; Southern posts only in Crane, Upton and Winkler Counties.

(Magnolia Petroleum Company)

(Effective January 24, 1929)

Mitchell County	$ .80
Howard-Glasscock County (shallow)	.80
Howard-Glasscock County (deep)	.65

Col-Tex Refining Company

Howard and Mitchell Counties	$ .80

MARKHAM

The Texas Company

All grades	1.00

LULING

All grades	1.00

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CRUDE OIL PRICE QUOTATIONS (*Continued from Page 48*)

NORTH AND CENTRAL TEXAS
(Effective January 24, 1929)

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude
(Humble Oil and Refining Company)

Below 25	.60
25 to 25.9 gravity	.66
26 to 26.9 gravity	.72
27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 and above	1.44

SOUTH TEXAS

Mirando and Salt Flat	.80

GULF COAST
(Effective January 26, 1929)

Grade "A" all companies	1.20
Gulf Coast Light Oil, below 25	1.05
25 to 25.9 gravity	1.07
26 to 26.9 gravity	1.09
27 to 27.9 gravity	1.11
28 to 28.9 gravity	1.13
29 to 29.9 gravity	1.15
30 to 30.9 gravity	1.17
31 to 31.9 gravity	1.19
32 to 32.9 gravity	1.21
33 to 33.9 gravity	1.23
34 to 34.9 gravity	1.25
35 to 35.9 gravity	1.27
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.33
39 to 39.9 gravity	1.35
40 an above	1.37

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9 Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

SOMERSET
Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

WYOMING-MONTANA
(Effective January 25, 1929)
Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.36
Grass Creek	1.36
Rock Creek	1.18
Lost Soldier	.95
Lance Creek	1.38
Mule Creek	1.10
Notches	.65
Big Muddy	1.28
Osage	1.33
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.33
Lander	.80
Simpson Ridge	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek
Midwest Refining Company

29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 and above	1.30

MONTANA

Sunburst	$1.65
Cat Creek	1.33
Lake Basin	2.20

NEW MEXICO

Artesia	1.08
Hogback	1.38

CANADA
(Effective January 26, 1929)

Oil Springs	1.97
Petrolia	1.90

LOUISIANA-ARKANSAS
(Effective January 26, 1929)

Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley*
(Atlantic Oil Producing Company, Standard of Louisiana, Magnolia Petroleum Company and

27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 gravity and above	1.44

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed.

The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS
(All Companies)

Below 28 gravity	.70
28 to 28.9 gravity....N	.74
29 to 29.9 gravity	.78
30 to 30.9 gravity	.82
31 to 31.9 gravity	.86
32 gravity and above	.90

SMACKOVER
(All Companies)

Below 24 gravity	.75
24 and above	.90
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	.85
Calion	.75

CALIFORNIA CRUDE OIL PRICES AT THE WELL
(EFFECTIVE JANUARY 18, 1929)

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity	Signal Hill	Alamitos Heights-Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ 70	$ .70	$ .70	$ .78	..	$ .50	$ .50	$ .50	$ .50	$ .50	$ .50
15-15.9	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
16-16.9	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
17-17.9	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
18-18.9	.75	.75	.75	.75	.75	..	..	.75	.75	.75	.70	.75	..	.50	.56	.56	.56	.56	.56
19-19.9	.80	.80	.80	.80	.80	..	..	.80	.80	.80	.75	.80	..	.50	.62	.62	.62	.62	.62
20-20.9	.85	.85	.85	.85	.85	..	..	.85	.85	.84	.80	.84	..	..	.68	.68	.68	.68	.68
21-21.9	.89	.89	.89	.89	.89	..	..	.89	.89	.88	.85	.88	.89	..	.74	.74	.74	.74	.74
22-22.9	.93	.93	.93	.93	.93	..	..	.93	.93	.91	.90	.91	.92	..	.80	.80	.80	.80	.80
23-23.9	.97	.97	.97	.97	.97	..	..	.97	.97	..	.95	.94	.95	..	.85	.85	.85	.85	.85
24-24.9	1.01	1.01	1.01	1.01	1.01	1.01	.94	1.01	1.01	..	.98	.97	.98	..	.90	.90	.90	.88	.88
25-25.9	1.05	1.05	1.05	1.05	1.05	1.05	.98	1.05	1.05	..	1.01	1.00	1.01	..	.95	.95	.95	.91	.91
26-26.9	1.09	1.09	1.09	1.09	1.09	1.09	1.02	1.09	1.09	..	1.04	1.04	1.04	..	1.00	1.00	1.00	.94	.94
27-27.9	1.13	1.13	1.13	1.13	1.13	1.13	1.06	1.13	1.13	..	1.07	1.08	1.07	..	1.05	1.05	1.05	.98	.97
28-28.9	1.17	1.17	1.17	1.17	1.17	1.17	1.10	1.17	1.17	..	1.10	1.12	1.10	..	1.10	1.10	1.10	1.02	..
29-29.9	1.21	1.21	1.21	..	1.21	1.21	1.14	..	1.21	..	1.13	1.16	1.15	..	1.16	1.16	1.16	1.06	..
30-30.9	1.25	1.25	1.25	..	1.25	1.25	1.18	..	1.25	..	1.16	1.20	1.20	..	1.22	1.22	1.22	1.10	..
31-31.9	1.30	1.30	1.30	..	..	1.30	1.23	..	..	..	..	..	1.25	..	1.28	1.28	1.28	1.14	..
32-32.9	1.35	1.35	1.35	..	..	1.35	1.28	..	..	..	..	..	1.30	..	1.34	1.34	1.34	1.18	..
33-33.9	..	..	..	..	..	1.41	1.34	..	..	..	..	..	1.35	..	1.40	1.40	1.40	1.22	..
34-34.9	..	..	..	..	..	1.47	1.40	..	..	..	..	..	1.40	..	..	..	1.46	1.26	..
35-35.9	..	..	..	..	..	1.53	1.46	..	..	..	..	..	1.45	..	..	..	..	1.30	..
36-36.9	..	..	..	..	..	1.59	1.52	..	..	..	..	..	1.50	..	..	..	..	..	..
37-37.9	..	..	..	..	..	1.65	1.58	..	..	..	..	..	1.55	..	..	..	..	..	..
38-38.9	..	..	..	..	..	1.71	1.64	..	..	..	..	..	1.60	..	..	..	..	..	..
39-39.9	..	..	..	..	..	1.77	1.70	..	..	..	..	..	1.65	..	..	..	..	..	..
40-40.9	..	..	..	..	..	1.83	1.76	..	..	..	..	..	..	..	..	..	..	..	..
41-41.9	..	..	..	..	..	1.89	1.82	..	..	..	..	..	..	..	..	..	..	..	..
42-42.9	..	..	..	..	..	1.95	1.88	..	..	..	..	..	..	..	..	..	..	..	..

KETTLEMAN HILLS—55 degree Gravity and above $1.65 per barrel.

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GUIBERSON

BETTER BE SAFE THAN SORRY

Sedgwick Success Starts Wide Activity in Kansas

(Continued from page 36)

large blocks of acreage that has been carefully selected following a study of the area with core drills. Shell Petroleum Corporation and Marland Production Company are perhaps the two largest acreage holders, with many other major companies ranking close behind. These blocks have for the most part been taken along the trends mentioned earlier in this article. They represent several years work on the part of several of the companies. Present leasing in this vicinity is down to checkerboarding, with the blocking work having been tremendously slowed up and pushed farther northwest.

Equipment

Electricity is fast becoming popular with operators in the district as a drilling power. More than a third of the tests in the Valley Center district are using this power for drilling. Marland production Company is preparing to do all of its future drilling in the Goodrich field by electricity. Kansas Gas & Electric Company of Wichita is supplying the electric power. Steam, gas and gasoline engines are also used. The first well to be completed with electricity was Alladin-T. B. Slick et al's Smyser 1, Section 36-25-1w, south edge of the Valley Center townsite.

Although a few rotaries are being moved in, cable tools have been used for past development and still play the major part. The average cable tool rig is 84 feet in height and use one boiler each of from 50 to 75 horsepower. The new rotary rigs being put in are 124 feet in height and require three boilers of 100 horsepower each. The average price of cable tool drilling is from $4 to $5 per foot, with $7 per foot for rotary work. There are few straight drilling contracts made, most of the drilling being done for an interest in the well or acreage. It requires 75 days or slightly longer to complete a standard tool test, while rotaries are expected to do it in about 50 days.

There are two different methods of setting pipe in the district. Some favor the setting of the 8¼-inch on the top of the Mississippi lime found from 2600-2800 feet, then underream from this point to below 3000 feet. Others are setting 8¼-inch at about 2000 feet an duse the six-inch throug the Mississippi. Buvibar - Marland - Gypsy's Lyons 2, 7-26-1e, is considered an average test as far as the casing record goes. It set the 20-inch casing at 47½ feet. The surface pipe has to be driven. The 15½-inch pipe was set at 472 feet. Next came the 12½-inch set at 1330 feet. The 10-inch followed at 2137 feet. The 8¼-inch was set at 2868 feet, and 6⅝-inch at 3336 feet.

From a supply standpoint, the district will be well served. In North Wichita, about five miles from the field, is the main headquarters of the Bridgeport Machine Company. Already, other companies are moving in. The majority of the new supply sites are close to the field. The Frisco Railroad is laying a spur along the Valley Center-Wichita pavement to take care of supply companies and other industries that may want to settle near the field. Santa Fe Railroad has purchased approximately 25 acres from the Bridgeport Machine Company for the same purpose.

Little congestion as far as the handling of the production is anticipated. Three refineries are located at Wichita, with sufficient lines in, or building to handle a big recovery. Very shortly the outlet facilities will be capable of handling better than 60,000 barrels daily in a pinch.

Derby Pipe Line Company has the first line into the field. It is a combination three and four-inch. It runs to the company's refinery at Wichita, and has been handling from 5000 to 6000 barrels daily. In the future the line will not run that large amount as it has been handling the entire load. Marland Pipe Line Company has completed its line which will probably handle 8000 barrels per day. It runs to the Oxford district of Sumner County where it connects with the company's line to Ponca City, Oklahoma.

The most important transportation development is the recently closed transaction whereby Skelly Oil Company and White Eagle Oil & Refining Company will jointly operate with the Empire Oil & Refining Company the old Empire water line from Valley Center to El Dorado. The old water line was used back in the boom days of El Dorado to supply water. It is a 12-inch line and could handle 40,000 barrels daily if necessary. Skelly Oil Company and White Eagle Oil & Refining Company first proposed to build a joint line of their own, but this idea was abandoned with the completion of the Empire deal. White Eagle Oil & Refining Company has a refinery at Augusta and Skelly Oil Company at El Dorado. Prairie Pipe Line Company will lay a six-inch line from the field to Towanda, which should handle 12,500 barrels per day.

In addition to these facilities there are the Santa Fe and Frisco railroads very handy. But it is doubtful if they will be called into pressing service. Then lines could be run to the Barnsdall refinery and the Golden Rure refinery, both at Wichita.

Marion County Well Increases When Deepened

TULSA.—Empire Oil & Refining Company's Suderman 1, SEc NE Section 12-19-2e, Marion County, featured development work in Kansas during the past week. This well was deepened from 2825½ feet to a total depth of 2837 feet in a sandy lime formation. The deepening of the test resulted in the output increasing to nearly 500 barrels per day.

This wildcat producer is located nearly 50 miles northeast of the Valley Center field of Sedgwick County which has been attracting so much attention from oil operators. All of the offsets to the Empire well are preparing to commence operations. It was drilled as an offset to the Courtney Davis discovery well, but failed to produce commercially in that formation. Its present depth is about 400 feet lower than the Courtney Davis.

The well has been showing for several weeks, but few anticipated such a good producer. At its first showing several operators took advantage of the low lease prices and took considerable checkerboard acreage. With the better performance of the well leasing activity has been greatly renewed. It is generally believed that the producing formation is in the Viola lime series, probably the dolomite Simpson, which is the pay horizon of the Valley Center field. A few are playing the two to be on the same trend, but general opinion is that the Empire well is on a high running northwest of the Valley Center ridge.

Several important wildcat showings in Sedgwick County kept operators interested in that district. Barnsdall Corporation's Samuels 1, NEc NW Section 24-25-1e, three miles east of the Goodrich producer of the Marland Production Company, swabbed 75 barrels of oil and 19 barrels of water in 12 hours. It has a total depth of 3053 feet in the chat pay which is the producing horizon of the Goodrich well. The source of the water has not been definitely determined.

Shawver & Mission's Broer 1, NEc SW Section 5-26-2e, seven miles due east of the Valley Center field, swabbed 75 barrels in five hours. It had 2100 feet of oil in the hole when the swabbing test was commenced and had 1200 feet in the hole when the test was completed. Total depth is 3020½ feet in a pure sand lying just above the Mississippi lime. It will be placed on the pump and probably completed at this depth.

Barnsdall Corporation's Means 1, NWc SW Section 34-27-2e, east of Wichita, found a hole full of water in the regular pay horizon of the Valley Center district which was encountered at 3342 feet.

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PERSONAL MENTION-MEN YOU KNOW

R. A. Liddle, chief geologist for the Pure Oil Company in the Texas- Louisiana division, was elected president of the Fort Worth Geological Society at the annual meeting held here January 21. Other officers elected include: A. R. Dennison, chief geologist for the Amerada Petroleum Corporation in the Texas district, vice-president; and C. E. Yager, geologist and assistant superintendent of land department for the Texas Pacific Coal & Oil Company, secretary-treasurer. Fort Worth will be host to members of the American Association of Petroleum Geologists in the spring for the annual meeting.

W. S. Morton, 84 years old and a pioneer driller in Illinois and California fields, died at his home in Compton, California, January 19. Mr. Morton drilled many of the oil wells in the City of Los Angeles as early as 1902.

Chas. R. Eyssen, manager of the Dallas sales office of the National Supply Company, died January 13 after a brief illness, and funeral services were held from the home of his parents at Caldwell, Ohio, January 17. Eyssen was 42 years old, and had more than 15 years of continuous service with the National Supply Company. Besides his parents, he is survived by a widow and three brothers.

Ray H. Pruitt, manager of the International Derrick & Equipment Company branch office at Tonkawa, Oklahoma, has been transferred to Wichita, Kansas, where he has been promoted to the position of district manager. In addition to maintaining a branch at Wichita, the International Derrick & Equipment Company has established a stock of Ideco equipment at Valley Center.

William E. Frick, president of the Frick-Reid Supply Corporation, died January 8, 1929.

B. E. Sanders now is associated with the Monarch Derrick Company as manager with offices at 411 Exchange National Bank building in Tulsa. He is also connected with the Coleman-Sanders Company, rig builders, and is well known in the oil and supply trade. The Monarch Derrick Company formerly was known as the derrick division of the McGraw-Bearly Lumber Company and F. D. Bearly of Oklahoma City is the directing head of both organizations.

E. B. Reeser, president of Barnsdall Corporation and president of the American Petroleum Institute, left last week for California, after returning to Tulsa from New York City.

Joe Meyer, of the firm Pettigrew & Meyer, New York, has returned to New York after spending a week in Tulsa.

J. W. Thomson, superintendent of Texas operations for the Kingwood Oil Company, which maintains headquarters at Okmulgee, Oklahoma, has transferred his operating base from Coleman to San Anelo, Texas.

John T. Withers, Jr., president of the Bluebonnet Oil Refining Company and vice-president of the Wickett Refining Company, both West Texas plants, died January 21 at his home in Dallas, Texas, after a brief illness. Withers was born in Calhoun, Missouri, March, 1885, and was engaged in railroad work prior to making his entrance into the oil industry in 1919 with the Beaver Refining Company, Pittsburgh, Pennsylvania. Burial was in Dallas.

M. C. Morris, district manager of The International Derrick & Equipment Company at Houston, has been transferred to Fort Worth to establish a West Texas district office. J. A. Tidball has also been transferred to Fort Worth as division engineer. L. L. Powell, formerly assistant district manager, has been placed in charge of the Houston district office.

R. E. Collom, for several years an official of the Marland Oil Company of California, has been elected executive vice-president of the company and will have charge of all California operations.

H. G. Trimble sales manager of the Nationual Supply Company, with Toledo headquarters, is spending some time in California.

W. P. Cassidy, formerly superintendent of the Land Department of the Marland Oil Company of California, has been appointed head of the Land and Leasing Department of the Pacific Western Oil Company.

W. H. Geis, vice-president of the Continental Oil Company and head of operations in California, is recovering from a serious attack of appendicitis.

P. C. Jones, president of the S. M. Jones Company, manufacturers of sucker rods, and Paul H. Jones, vice-president of the company, are making a tour of the oil fields of Texas and Oklahoma.

Joe Zeppa, secretary of the Arkansas Natural Gas Corporation at Shreveport, Louisiana, has resigned to accept the vice-presidency of the MacMillan Petroleum Company with headquarters at Los Angeles, California. Mr. Zeppa will start for his new post by automobile within a few days. His successor has not been chosen. Announcement of his resignation was made at a testimonial banquet tendered him by his fellow workers here recently. He was presented with a handsome wrist watch by his fellow workers. Mr. Zeppa was transferred to Shreveport last March when the Arkansas Natural absorbed the Natural Gas and Fuel Corporation of El Dorado, Arkansas.

F. O. Prior, formerly general superintendent of the Dixie Oil Company, a subsidiary of the Standard Oil Company of Indiana, was elected a vice-president of the Dixie Oil Company succeeding George D. Morgan, at a recent meeting of the stockholders at Shreveport, Louisiana. A. W. Peake was re-elected president and A. M. McCorkle was re-elected vice-president and secretary-treasurer. The three officers comprise the board of directors.

W. D. Waltman, vice-president of Franco Wyoming Oil Company, of Denver, New York and Paris, left New York on January 22 on an examination trip covering the company's interests in the Rocky Mountain area, Texas and California, and will sail from Los Angeles on February 11, returning to New York by way of Panama. The Eastern office of Franco Wyoming Oil Company is at 551 Fifth Avenue New York City.

James J. Cosgrove has joined the Marland Oil Company as general counsel. He was formerly with The Texas Company in the legal department of the New York headquarters. He has moved to Ponca City to make his home.

Washington.—Advice from the Department of Commerce at Brisbane, Queensland, Australia, states that at Roma, 318 miles from Brisbane small quantities of a very light oil are being produced at a depth of 3700 feet. The gas flow is up to 20,000,000 feet per day and a one unit absorption plant is now extracting gasoline from the gas.

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News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

Decline of Deep Wells Fails to Halt Santa Fe Springs

LOS ANGELES.—Registering a gain during the week, but showing the effect of the terrific pace of the past month, Santa Fe Springs continued its upward march, despite a heavy decline from the 60 deep sand producers. With an average initial production of 3000 barrels, the 10 completions fell considerably short of the average of previous weeks, but failed to disclose a dangerous condition in any part of the field. Every well showed a negligible cut, making it the cleanest bunch of completions finished for two months. With a maximum cut of one per cent. the new wells demonstrated that in the central and eastern parts of the field water should not cause serious thought for some time.

The Intermediate zone, which two months ago gained much favor, has been completely crowded into the background by the Buckbee sand. The operators have again changed their plans and are rushing their wells to the deeper Buckbee zone, after tentatively changing to first the upper or Intermediate formation. This switching around was to be expected and shows that they are after the maximum amount of oil in the minimum time. A few satisfactory completions in the Intermediate zone were taken seriously, but several not so satisfactory were taken even more seriously, the net result being that few more wells will be completed in the formation except near the center of the field. Careful correlating has shown that a thin water sand separates the zone, except in a favored location near the apex of the structure. At first, it was thought that the sand contained no water at all where it was commercially productive, but the cut in recent completions has shown this to be erroneous. Two satisfactory levels were found, both shutting out the water strata but neither including the whole body of the sand, except in the center wells.

The phenomenal performance of the General Petroleum Corporation's No. 225 has caused a shifting of operations to the east side of the field. Previous completions had indicated a favorable trend in this direction, but the well was the signal to rush operations in this sector. The General Petroleum Corporation has made eight new locations on the strength of the well, while the Standard Oil Company followed suit with three new wells. Originally rated as a 9000-barrel well, No. 225 actually produced 10,216 barrels after cleaning up. It was the first producer to run into five figures, and the fact that it is located far to the east makes its performance even more satisfactory.

Still Deeper Sand

The danger from production from a still deeper sand—possibly a formation in the upper Miocene—is apparent, but there is not definite proof that such a sand exists. Geologists state that there is no definite reason why another sand should not be found around 6400 feet, but they also state they have no positive reason to believe that another zone will be found. George F. Getty is coring ahead at 6260 feet in No. 19 and probably will be the first to reach the level at which the zone is expected. The well is located near the center of the field and should be a representative test. The Buckbee zone was as thick in this well as in any, indicating that the location is favorable. General Petroleum Corporation has passed 6300 feet in Jalk 111, a deep test in the southwest part of the field. This well is located in a rather fatal sector and its failure to encounter a deeper sand would not eliminate the possibility of a new sand further up on the structure. Since the well was a virtual failure in the Buckbee it would certainly miss a smaller zone below the present deep sands. Wilshire Oil Company, discoverer of the Buckbee zone, is seeking new laurels with Buckbee 1. The well is coring below the Buckbee zone, in the utmost secrecy.

The Buckeye Union Oil Company's Irish 2 and the Plymouth Petroleum Company's No. 1 are important tests in the extreme eastern part of the field and their success would extend the producing limit to favorably conform with that in the Meyer zone. The former has picked up the Buckbee shale at 5900 feet, while the latter is drilling in coarse gray sand at 5975 feet.

In sharp contrast to the favorable developments along the east side, a large portion of the western area has shown little promise. Four wells have shown bottom water in the Buckbee sand, four have failed to produce when swabbed, four showed only a little oil, while 14 have been shut down. Some of these wells are near a well which came in with an initial production of 7000 barrels, adding considerably to the mystery. Water has caused much trouble in this part of the field. Wells similar distances from the center of the field on the north and east sides have produced satisfactorily.

Little significance is attached to either Associated Oil Company's Clark 2 or Richfield Oil Company's Elliott 1, both located far to the northwest and apparently outside the Buckbee zone. The former is coring below 7160 feet, with the formation running to gray sand. The latter is approaching 7000 feet in a similar formation. The outlook for both of these wells is considered bad, since neither obtained production in the Buckbee zone.

Standard Oil Company sprang a surprise by completing Koontz 11 with an initial production of 2200 barrels from 5798 feet. The well was tested in only 15 feet of the Buckbee zone and its performance was more than satisfactory.

Most Northerly Test

Associated Oil Company is testing Dallugge 7, the most northerly well, but there is some doubt as to the outcome. The well cut only a small amount of sand and is farther out than some of the failures drilled elsewhere. A commercial well at this point would add much to the value of leases lying between the location and the nearest producer.

Three Buckbee zone wells have been placed on compressors, but their failure to flow proves little. The decline in all Buckbee sand wells has been rather rapid and it is the regular course of events that some of the smallest should require help within a few weeks after completion. The gas pressure in the little-drilled areas is almost as high as in the first wells.

The field has come to a point where it will require a large initial production each week to prevent occasional declines. More than 60 wells have been completed and the average decline per well per week is still high. As more wells are completed, the decline becomes more top-heavy. Completions in rapid-fire order are expected for several weeks and a peak should be reached some time in February.

Fifteen wells are ready for completion, with twice as many scheduled for the next few weeks. The number of drilling wells has dropped to 210, due to the steady stream of completions and the suspension of operations in more than a dozen wells.

Field production is hovering around 175,000 barrels, with the average for the

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week slightly less. It should require at least two weeks to shove production above 200,000 barrels, with a chance that more time will be required.

Completions

Completions during the week follow:

General Petroleum Corporation, Hill-Midway 187B; initial production, 5000 barrels; total depth, 5880 feet; gravity, 35; cut, 0.7 per cent. (Buckbee zone).

General Petroleum Corporation, S. F. S. Community 186F; initial production 2300 barrels; total depth, 5002 feet; gravity, 35; cut, 0.5 per cent. (Intermediate zone).

General Petroleum Corporation, S. F. S. Community 191B; initial production, 4000 barrels; total depth, 5765 feet; gravity, 34.2; cut, 0.2 per cent. (Buckbee zone).

General Petroleum Corporation, S. F. S. 168B; initial production, 2000 barrels; total depth, 5804 feet; gravity, 34.8; cut, 0.2 per cent. (Buckbee zone).

General Petroleum Corporation, S. F. S. 168C; initial production, 3200 barrels; total depth, 5802 feet; gravity, 35; cut, 0.4 per cent. (Buckbee zone).

The Texas Company, Batson 5; initial production, 3800 barrels; total depth 5295 feet; gravity, 34.6; cut, 0.5 per cent. (Intermediate zone).

The Texas Company, Weaver 5; initial production, 3500 barrels; total depth, 5095 feet; gravity, 34.2; cut, 1.0 per cent. (Intermediate zone).

Wilshire Oil Company, Cecelia 1-B (workover); initial production 2800 barrels; total depth, 5850 feet; gravity, 34.5; cut, 0.9 per cent. (Buckbee zone).

Standard Oil Company, Koontz 11; initial production 2200 barrels; total depth, 5798 feet; gravity, 35.3; cut. 0.4 per cent. (Buckbee zone).

Shell Company, G. H. N. 15; initial production, 1700 barrels; total depth, 5723 feet; gravity, 35; cut, 0.1 per cent. (Buckbee zone).

General Petroleum Corporation, with a production in excess of 50,000 barrels, leads the list of deep sand producers.

Deep Sand at Seal Beach Shows Favorable Prospect

Los Angeles.—Completion 10 days ago of a 3200-barrel well in the Seal Beach field gives the deep sand in the conservatively developed sector the appearance of a producing formation of unusual possibilities. The well was Marland Oil Company's Bixy 15 and was completed at 5440 feet to include more sand than any completion below 5000 feet. A part of the Lovell and almost all of the Wasem sands were included to make the unusual showing. The action of the well means that present production may be sustained, or even increased. The Wasem sand in the townlot area has been almost depleted and the few completions below 6500 feet in this sector have been unsatisfactory.

Standard Oil Company has re-completed San Gabriel 9 as a 2200-barrel well at 5432 feet. The oil was 26 gravity and clean. This well was completed in the Wasem sand and is located in the conservatively developed area.

Long Beach Output Held Steady During Week

Los Angeles.—Production in the Long Beach field held steady during the past week, with four average completions to offset the decline. The best well of the week was Graham and Loftus' Warburton 1, which came in with an initial production of 1200 barrels from 6902 feet. Other completions included the McMillan Producing Company's No. 7, a 500-barrel well at 4544 feet, Shell Company's Alamitos 36, a 200-barrel producer from 6307 feet, and Shell Company's Wilbur 6, which came in with an initial production of 600 barrels from 6600 feet.

Elwood Outpost Tests Appear Failures

Santa Barbara, Calif.—The Rio Grande Oil Company and Barnsdall Oil Company are preparing to complete Luton-Bell 5, the sixth well drilled in the new Elwood field, and if the action of the well is a true indication, it will be one of the largest yet brought in. The oil sand was found at 3150 feet and after the cement was drilled out below the shoe of the 11¾-inch casing the well staged a miniature demonstration. Only a column of heavy mud prevented the well from blowing out. Luton-Bell 5 was drilled to the sand in a very short time and tapped the producing formation at an unusually shallow depth.

The outpost wells are interesting tests, but they apparently fall outside the producing limits of the field. Of the several wells drilling, not one has encountered more than a faint showing. At least three wells are more than 1000 feet below the depth at which the discovery well was completed, and, allowing for extreme dips, they are apparently outside the producing limits.

Field production approximates 18,000 barrels from five wells, with a much greater production possible if the wells were allowed to flow at their maximum rate.

The field arrangement is unique in many respects. The wells flow the crude into large storage tanks. From these tanks the oil flows by gravity to ocean tankers, via a floating dock.

Confine Kettleman Hills Work to Preliminaries

Coalinga, Calif. — Companies holding large acreage in the Kettleman Hills field are not inclined to rush developments, being content to build roads, lay water lines and otherwise make ready for drilling in one of the most difficult of all California fields. One company is working more than 200 men in its road-building and pipe line work, while another has half as many on a much smaller acreage. The field lies along a ridge which is cut up by miniature canyons and mountains. It is only 20 miles from Coalinga, but until recently the roads were almost impassable in bad weather.

Standard Oil Company's No. 81, which closely offsets the discovery well, is drilling rapidly ahead at 2000 feet. This well apparently is slightly higher on structure than the first producer, but no correlations have been made.

Milham Exploration Company's Elliott 1 continues to produce 4000 barrels of 60 gravity crude. The oil is almost as clear as gasoline and burns readily in automobiles. Gas production averages 50 million cubic feet daily.

Lawndale Area Has Many Wells Drilling

Los Angeles.—One by one new derricks are springing up in the Lawndale field, giving the area the appearance of a townlot drilling campaign in a few short weeks. In their anxiety to obtain good leases, many of the companies have agreed to drilling clauses, and it is for this reason that so many new wells have started. With only one satisfactory producing well, leasing has taken no particular turn, one guess being as good as another. Surface indications point to a northwest-southeast trend, however, which would throw the field in line with every major producing field in the Los Angeles basin. Such a condition would cause at least half of the field to lie in the townlot sector. Acreage northwest of the discovery well lies in comparatively large blocks, while east and southeast it is broken up into very small lots. These lots have been leased individually in many cases, with several major companies in the field, the development of the district will be a matter of months only. Production should be found between 5500 and 6000 feet, depending upon whether the discovery well is centrally located.

Potrero

Los Angeles.—James Pollard has passed 3600 feet in his wildcat well in the City of Inglewood, with no oil showings of importance at any depth. The well is located northwest of the Associated Oil Company's discovery well in the Potrero field and a successful completion at this point would extend the field about one mile and prove several hundred acres.

Associated Oil Company is drilling at 1000 feet in Potrero 1, the first test on the large holdings of the Potrero Country Club. There is no change in the status of the company's other drilling wells.

Fruitvale

Bakersfield, Calif.—With a large part of its acreage proven by completion of several wells, Pacific Eastern Production Company has shut down two of its wells in the Fruitvale field. Both wells are located on Section 22-29-27 and both were plugged back prior to suspension. One other well will be tested within a week. This company discovered the field one year ago and has an unbroken record of successful completions. Two of the outpost wells have been shut down, pending developments nearby and a favorable turn in the heavy crude market.

North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Drilling in Hendrick Pool Falling Steadily

SAN ANGELO, Texas. — Drilling operations in the Hendrick field proper are declining each week, and more than one-half of the active tests are held by the joint ownership of Southern Crude Oil Purchasing Company, R. A. Westbrook Interests and the Dixie Oil Company. The latter have 25 tests in the lime horizon in process of completion, or shut down for cable tools to drill in, while other operators in the field have only 10 tests at this stage. The bulk of the new field work is taking place on the south end, where unusually heavy producers have been scored lately, including Skelly Oil Company's T. G. Hendrick 1-C, which was reported last week as flowin at rate of 500 barrels per hour at 3028-40 feet, with about five per cent. water. Southern et al have one test drilling above the lime and five others starting up, while other operators account for seven derricks and rigs and six tests drilling above the lime, thus making a total of 12 tests getting started and 42 tests drilling above or in the lime, or awaiting tools to complete.

Efforts of the Gulf Production Company to extend the O'Brien pool, located three miles south of the Hendrick field, a half mile to the south with its G. W. O'Brien 3 resulted in a flow of 1000 barrels of sulphur water in the expected lime pay horizon while drilling ahead at 3104 feet. Gulf Production Company's O'Brien 2, located in the northwest corner of Section 31 and an east offset to Sid Richardson's discovery well, has been shut down with hole full of water at 3093 feet to await the outcome of O'Brien 3. Marland Production Company's Tobe Morton 1, a north offset to the O'Brien pool discovery well, increased its flow to 20 barrels of oil per hour last week after drilling lime pay at 2830-2992 feet.

The third new test for the month to be announced for the Llano pool in north Winkler County was staked last week when the Prairie Oil & Gas Company's W. F. Scarborough 1 located in the northeast corner of the SW SE Section 1, Block C-22, thus giving offsets to be drilled by Tidal Oil Company, Magnolia Petroleum Company, and the Shell-Llano Oil Company interests. The latter are drilling a west offset to the flowing well recently completed by Magnolia Petroleum Company and Gulf Production Company is drilling a north offset to same. Magnolia Petroleum Company's Scarborough 1 is flowing 140 barrels of 37 gravity oil daily, and because of the gravity of the oil being about seven degreess higher than that found in other Winkler County areas, a 15-mile four-inch line is being layed to keep the oil separate in Magnolia Petroleum Company's tank farm, located southeast of the Hendrick field. The two 40-barrel pumpers, including the discovery well on Shell-Llano's lease are served by a small line built by Shell Pipe Line Company to tap Humble Pipe Line Company's eight-inch line serving the Daugherty pool, located about three miles to the southwest, thus giving the Llano pool two pipe line connections. All lease owners on the Scarborough ranch have been requested to start developments by Mr. Scarborough, who turned down rental payments last summer from those that failed to comply with his demands. However, rentals are accepted from those that are now starting developments, thereby removing clouds from titles.

The discovery of a flow of 7,800,000 cubic feet of gas, testing 870 pounds rock pressure, with light spray of oil, in Geo. H. Anderson and Tower-McKanna's wildcat test on University Land, located about 15 miles west of the Yates field, Pecos County, recently in sand at 1960-63 feet, has resulted in another test being started about one mile to the north. Grayburg Oil Company contracted last week with the Harry Adams Company to drill University 1, located in the east half of NE Section 2, Block 17. The Harry Adams Company will use the machine that drilled the above discovery well on the new test after the well has been plugged back from sulphur water encountered at 1995-98 feet. Buell-Hagan et al's University 1-B has been located in the southwest corner of the SE Section 36, Block 18, or about six miles southwest of the above gasser.

After having encountered sulphur water in two tests drilled on the southwest side of the Yates field, The California Company's Smith 1, lease 1, Section 21, widened the southeast part of the field a half mile, with an initial gauge of 618 barrels of pipe line oil during first one-half-hour gauge from regular lime at 1405-43 feet.

Line Will Provide Outlet For Pecos County Oil

San Angelo, Texas—Construction of a 16-mile pipe line has been started by the Pecos Valley Oil Company, which discovered a shallow oil pool in northern Pecos County last November, to provide a market outlet for the discovery well and to serve a half dozen additional tests that are to be drilled on nearby acreage. The Orient Railroad is laying track for a six-car capacity rack about 13 miles northeast of Fort Stockton, and the oil will be marketed with a refining plant on this line. The Pecos Valley Oil Company's Pecos Land Company 1 registered an initial flow of 120 barrels natural at 1626-28 feet late in November, and continues to flow about 95 barrels daily. Headquarters of the company are at Pasadena, California, with Hal Cochran, president and general manager. G. Guy Miller, San Angelo geologist, is representing the company and made the location for the first well.

Thin Layer of Oil Sand in Coleman County

Coleman, Texas—Texas Pacific Coal & Oil Company's wildcat test on the R. C. Gay land opened a shallow oil producing area in the Fry sand in western Coleman County during the past week with an initial flow of 50 barrels of 32 gravity oil and 2,500,000 cubic feet of gas from 1337-66 feet. This oil producer offsets to the east a small gasser completed recently in the same horizon by Cameron and associates. The Gay well was deepened about eight-inches early this week and encountered water, thus indicating a very thin layer of oil bearing sand, which was logged at 1364-66 feet and eight inches. The well was making 40 barrels oil daily, with 10 per cent. water, at last reports, and a connection has been made by the Prairie Pipe Line Company.

Humble Has Inquiries Out on Big Tank Order

Houston.—Humble Oil & Refining Company last week sent out inquiries to steel tank manufacturers for price quotations on steel for the erection of 50 tanks of 55,000 barrel capacity each. This inquiry follows plans of the company concerning the building of more storage in West Texas fields.

No definite plans for such a tank program have been made, but continued heavy production in West Texas districts it is anticipated will necessitate additional storage room by the company.

week slightly less. It should require at least two weeks to shove production above 200,000 barrels, with a chance that more time will be required.

Completions

Completions during the week follow:

General Petroleum Corporation, Hill-Midway 187B; initial production, 5000 barrels; total depth, 5880 feet; gravity, 35; cut, 0.7 per cent. (Buckbee zone).

General Petroleum Corporation, S. F. S. Community 186F; initial production 2300 barrels; total depth, 5002 feet; gravity, 35; cut, 0.5 per cent. (Intermediate zone).

General Petroleum Corporation, S. F. S. Community 191B; initial production, 4000 barrels; total depth, 5765 feet; gravity, 34.2; cut, 0.2 per cent. (Buckbee zone).

General Petroleum Corporation, S. F. S. 168B; initial production, 2000 barrels; total depth, 5804 feet; gravity, 34.8; cut, 0.2 per cent. (Buckbee zone).

General Petroleum Corporation, S. F. S. 168C; initial production, 3200 barrels; total depth, 5802 feet; gravity, 35; cut, 0.4 per cent. (Buckbee zone).

The Texas Company, Batson 5; initial production, 3800 barrels; total depth 5295 feet; gravity, 34.6; cut, 0.5 per cent. (Intermediate zone).

The Texas Company, Weaver 5; initial production, 3500 barrels; total depth, 5095 feet; gravity, 34.2; cut, 1.0 per cent. (Intermediate zone).

Wilshire Oil Company, Cecelia 1-B (workover); initial production 2800 barrels; total depth, 5850 feet; gravity, 34.5; cut, 0.9 per cent. (Buckbee zone).

Standard Oil Company, Koontz 11; initial production 2200 barrels; total depth, 5798 feet; gravity, 35.3; cut. 0.4 per cent. (Buckbee zone).

Shell Company, G. H. N. 15; initial production, 1700 barrels; total depth, 5723 feet; gravity, 35; cut, 0.1 per cent. (Buckbee zone).

General Petroleum Corporation, with a production in excess of 50,000 barrels, leads the list of deep sand producers.

Deep Sand at Seal Beach Shows Favorable Prospect

Los Angeles.—Completion 10 days ago of a 3200-barrel well in the Seal Beach field gives the deep sand in the conservatively developed sector the appearance of a producing formation of unusual possibilities. The well was Marland Oil Company's Bixy 15 and was completed at 5440 feet to include more sand than any completion below 5000 feet. A part of the Lovell and almost all of the Wasem sands were included to make the unusual showing. The action of the well means that present production may be sustained, or even increased. The Wasem sand in the townlot area has been almost depleted and the few completions below 6500 feet in this sector have been unsatisfactory.

Standard Oil Company has re-completed San Gabriel 9 as a 2200-barrel well at 5432 feet. The oil was 26 gravity and clean. This well was completed in the Wasem sand and is located in the conservatively developed area.

Long Beach Output Held Steady During Week

Los Angeles.—Production in the Long Beach field held steady during the past week, with four average completions to offset the decline. The best well of the week was Graham and Loftus' Warburton 1, which came in with an initial production of 1200 barrels from 6902 feet. Other completions included the McMillan Producing Company's No. 7, a 500-barrel well at 4544 feet, Shell Company's Alamitos 36, a 200-barrel producer from 6307 feet, and Shell Company's Wilbur 6, which came in with an initial production of 600 barrels from 6600 feet.

Elwood Outpost Tests Appear Failures

Santa Barbara, Calif.—The Rio Grande Oil Company and Barnsdall Oil Company are preparing to complete Luton-Bell 5, the sixth well drilled in the new Elwood field, and if the action of the well is a true indication, it will be one of the largest yet brought in. The oil sand was found at 3150 feet and after the cement was drilled out below the shoe of the 11¾-inch casing the well staged a miniature demonstration. Only a column of heavy mud prevented the well from blowing out. Luton-Bell 5 was drilled to the sand in a very short time and tapped the producing formation at an unusually shallow depth.

The outpost wells are interesting tests, but they apparently fall outside the producing limits of the field. Of the several wells drilling, not one has encountered more than a faint showing. At least three wells are more than 1000 feet below the depth at which the discovery well was completed, and, allowing for extreme dips, they are apparently outside the producing limits.

Field production approximates 18,000 barrels from five wells, with a much greater production possible if the wells were allowed to flow at their maximum rate.

The field arrangement is unique in many respects. The wells flow the crude into large storage tanks. From these tanks the oil flows by gravity to ocean tankers, via a floating dock.

Confine Kettleman Hills Work to Preliminaries

Coalinga, Calif. — Companies holding large acreage in the Kettleman Hills field are not inclined to rush developments, being content to build roads, lay water lines and otherwise make ready for drilling in one of the most difficult of all California fields. One company is working more than 200 men in its road-building and pipe line work, while another has half as many on a much smaller acreage. The field lies along a ridge which is cut up by miniature canyons and mountains. It is only 20 miles from Coalinga, but until recently the roads were almost impassable in bad weather.

Standard Oil Company's No. 81, which closely offsets the discovery well, is drilling rapidly ahead at 2000 feet. This well apparently is slightly higher on structure than the first producer, but no correlations have been made.

Milham Exploration Company's Elliott 1 continues to produce 4000 barrels of 60 gravity crude. The oil is almost as clear as gasoline and burns readily in automobiles. Gas production averages 50 million cubic feet daily.

Lawndale Area Has Many Wells Drilling

Los Angeles.—One by one new derricks are springing up in the Lawndale field, giving the area the appearance of a townlot drilling campaign in a few short weeks. In their anxiety to obtain good leases, many of the companies have agreed to drilling clauses, and it is for this reason that so many new wells have started. With only one satisfactory producing well, leasing has taken no particular turn, one guess being as good as another. Surface indications point to a northwest-southeast trend, however, which would throw the field in line with every major producing field in the Los Angeles basin. Such a condition would cause at least half of the field to lie in the townlot sector. Acreage northwest of the discovery well lies in comparatively large blocks, while east and southeast it is broken up into very small lots. These lots have been leased individually in many cases, with several major companies in the field, the development of the district will be a matter of months only. Production should be found between 5500 and 6000 feet, depending upon whether the discovery well is centrally located.

Potrero

Los Angeles.—James Pollard has passed 3600 feet in his wildcat well in the City of Inglewood, with no oil showings of importance at any depth. The well is located northwest of the Associated Oil Company's discovery well in the Potrero field and a successful completion at this point would extend the field about one mile and prove several hundred acres.

Associated Oil Company is drilling at 1000 feet in Potrero 1, the first test on the large holdings of the Potrero Country Club. There is no change in the status of the company's other drilling wells.

Fruitvale

Bakersfield, Calif.—With a large part of its acreage proven by completion of several wells, Pacific Eastern Production Company has shut down two of its wells in the Fruitvale field. Both wells are located on Section 22-29-27 and both were plugged back prior to suspension. One other well will be tested within a week. This company discovered the field one year ago and has an unbroken record of successful completions. Two of the outpost wells have been shut down, pending developments nearby and a favorable turn in the heavy crude market.

North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Drilling in Hendrick Pool Falling Steadily

SAN ANGELO, Texas. — Drilling operations in the Hendrick field proper are declining each week, and more than one-half of the active tests are held by the joint ownership of Southern Crude Oil Purchasing Company, R. A. Westbrook Interests and the Dixie Oil Company. The latter have 25 tests in the lime horizon in process of completion, or shut down for cable tools to drill in, while other operators in the field have only 10 tests at this stage. The bulk of the new field work is taking place on the south end, where unusually heavy producers have been scored lately, including Skelly Oil Company's T. G. Hendrick 1-C, which was reported last week as flowin at rate of 500 barrels per hour at 3028-40 feet, with about five per cent. water. Southern et al have one test drilling above the lime and five others starting up, while other operators account for seven derricks and rigs and six tests drilling above the lime, thus making a total of 12 tests getting started and 42 tests drilling above or in the lime, or awaiting tools to complete.

Efforts of the Gulf Production Company to extend the O'Brien pool, located three miles south of the Hendrick field, a half mile to the south with its G. W. O'Brien 3 resulted in a flow of 1000 barrels of sulphur water in the expected lime pay horizon while drilling ahead at 3104 feet. Gulf Production Company's O'Brien 2, located in the northwest corner of Section 31 and an east offset to Sid Richardson's discovery well, has been shut down with hole full of water at 3093 feet to await the outcome of O'Brien 3. Marland Production Company's Tobe Morton 1, a north offset to the O'Brien pool discovery well, increased its flow to 20 barrels of oil per hour last week after drilling lime pay at 2830-2992 feet.

The third new test for the month to be announced for the Llano pool in north Winkler County was staked last week when the Prairie Oil & Gas Company's W. F. Scarborough 1 located in the northeast corner of the SW SE Section 1, Block C-22, thus giving offsets to be drilled by Tidal Oil Company, Magnolia Petroleum Company, and the Shell-Llano Oil Company interests. The latter are drilling a west offset to the flowing well recently completed by Magnolia Petroleum Company and Gulf Production Company is drilling a north offset to same. Magnolia Petroleum Company's Scarborough 1 is flowing 140 barrels of 37 gravity oil daily, and because of the gravity of the oil being about seven degreess higher than that found in other Winkler County areas, a 15-mile four-inch line is being layed to keep the oil separate in Magnolia Petroleum Company's tank farm, located southeast of the Hendrick field. The two 40-barrel pumpers, including the discovery well on Shell-Llano's lease are served by a small line built by Shell Pipe Line Company to tap Humble Pipe Line Company's eight-inch line serving the Daugherty pool, located about three miles to the southwest, thus giving the Llano pool two pipe line connections. All lease owners on the Scarborough ranch have been requested to start developments by Mr. Scarborough, who turned down rental payments last summer from those that failed to comply with his demands. However, rentals are accepted from those that are now starting developments, thereby removing clouds from titles.

The discovery of a flow of 7,800,000 cubic feet of gas, testing 870 pounds rock pressure, with light spray of oil, in Geo. H. Anderson and Tower-McKanna's wildcat test on University Land, located about 15 miles west of the Yates field, Pecos County, recently in sand at 1960-63 feet, has resulted in another test being started about one mile to the north. Grayburg Oil Company contracted last week with the Harry Adams Company to drill University 1, located in the east half of NE Section 2, Block 17. The Harry Adams Company will use the machine that drilled the above discovery well on the new test after the well has been plugged back from sulphur water encountered at 1995-98 feet. Buell-Hagan et al's University 1-B has been located in the southwest corner of the SE Section 36, Block 18, or about six miles southwest of the above gasser.

After having encountered sulphur water in two tests drilled on the southwest side of the Yates field, The California Company's Smith 1, lease 1, Section 21, widened the southeast part of the field a half mile, with an initial gauge of 618 barrels of pipe line oil during first one-half-hour gauge from regular lime at 1405-43 feet.

Line Will Provide Outlet For Pecos County Oil

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No definite plans for such a tank program have been made, but continued heavy production in West Texas districts it is anticipated will necessitate additional storage room by the company.

Work to Start on Gas Line to St. Louis

Shreveport, La. — Mississippi River Fuel Corporation will start work immediately on construction of a 22-inch gas line from Northeast Louisiana gas fields to St. Louis, Missouri. Announcement of this project confirms rumors which have been extant for a number of months that such a line would be built. The line will be approximately 460 miles long and have a daily capacity of one hundred million feet, which it is estimated is less than half of the potential market for industrial fuel in St. Louis and adjacent manufacturing centers, and in addition fuel is to be supplied intermediate points.

Mississippi River Fuel Corporation is a $30,000,000 concern financed by a group of strong companies, including Standard Oil Company of New Jersey, United Gas Corporation of St. Louis, Columbian Carbon Company, Electric Power & Light Company, United Carbon Company, and Palmer Corporation. The companies associated in the enterprise control more than 250,000 acres of gas lands in the Monroe and Richland gas areas. The two fields have a rated open flow capacity of approximately six billion feet of gas.

Between six and nine months will be required for completion of the line. Much of the right-of-way has been secured and negotiations are underway for the rest of it.

Jefferson Davis Parish Well Disappointment

Houston. — Vacuum Oil Company's DeVilbiss 1 on a supposed dome three miles north of Roanoke, Jefferson Davis Parish, the test which gave promise last week of being a fair producer, proved somewhat of a disappointment, and liner and screen are now being fished out preparatory to deepening.

Present depth of the hole is 4201 feet. Last week screen was set in 13 feet of sandy shale at that depth, and after washing for several hours, considerable wash water was displaced by oil which the sand yielded. The well would not flow, however, and three-inch tubing was run in, after which the well began making a small amount of fluid, swabbing and flowing through the tubing; the fluid being salt water, with less than five per cent. oil. The oil which the well produced tests 23 gravity.

Rockland District Gets More Tests

Houston.—Mark Kleeden's Rockland district shallow producer in the Jasper County Panhandle of East Texas, is reported to have produced approximately 900 barrels of 21 gravity oil, net, since sufficient tankage has been erected to test the discovery. Gross production is estimated to amount to about 25 per cent. oil and 75 per cent. water. Depth of the pay is 1274 feet, and production is reported coming from either the top of the Yegua or the base of the Jackson formation.

Oscar Head last week staked location for Caswell 1 about 800 feet south of the Boykin 3 producer. The new location is across the Nechez River in Tyler County, and is in the Benjamin Enloe Survey. Boykin 3, which found its small commercial production after Nos. 1 and 2 had both showed for production but not profitably, is located in the Britton Addison Survey.

Regardless of the outcome of this shallow discovery in a production way, the Rockland district, which has received much attention from individual operators during the past two decades but little from major concerns, is destined to receive a new peak in activity resulting in the performance of Kleeden's Boykin 3 producer.

Production of Boykin 3 is by heads natural. Total fluid is reported to have averaged more than 200 barrels daily for the last week in January.

Sun Company Gets Third Washington County Well

Houston. — Sun Oil Company's J. Grote 1 was completed late Tuesday this week as the third producer on the Clay Creek interior salt dome, Washington County; making 155 barrels per hour, or at the rate of 3720 barrels per day, flowing through a 1½-inch choke. Having been plugged back, it is producing from broken sand at 935-1250 feet.

This well is 600 feet north of G. F. Grote 1, the discovery well of the field; and is slightly east of G. F. Grote 2, second producer at Clay Creek.

J. Grote 1, originally set six-inch casing about two weeks ago at 1233 feet, and when deepened to 1341 feet tested mostly water; following which it was plugged back to 1250 feet, from which it is now producing.

The Sun company is working on two other tests in this field, Einman 1 and Marcus 1. The company has built a four-inch line to Gay Hill, a station on the Santa Fe railroad, six miles distant; and is shipping the production by rail to Beaumont. A posted price of 85 cents per barrel was announced for the Clay Creek crude.

Further Downward Revision of Crude Prices Anticipated

(Continued from page 46)

will receive between 85 and 95 cents per barrel for their oil, while those in Gray County, where the average crude is about five degrees higher and on a higher price scale, will receive about $1.15 per barrel. This particular district is not producing enough oil to take care of local plants and regular tank car shipments to distant refining points to allow the four trunk lines serving the fields to operate at one-half their capacity, and heavy withdrawals from storage have been made during the past year.

California

The entire market structure in California is weaker than at the beginning of the year, despite a strong undertone of optimism. Heavy crude is a drug on the market and the lighter oil is becoming plentiful. Total production has climbed to 750,000 barrels, or fully 50,000 barrels above the present needs, with a greater surplus in sight. The situation is not yet critical but a continuation of the present increase and a slow decline from the peak will certainly create a genuine surplus. The operators have temporarily lost their better judgment and seem to be steering toward the danger point with full steam ahead. At least one new field has entered the ranks of potential producers and another four months may see the beginning of a new source of supply.

A further reduction in the price of heavy crudes has sent the scale so low that few wells can be produced at a profit. Since the lighter crudes are chiefly responsible for the present surplus, producers of heavy oil are not satisfied to carry a further burden. Production of heavy oil has shown a decline, but by throwing fuel oil over into the heavy oil column when calculating stocks it appears that actual field production has been responsible for the increase. Increased refinery runs and a poor market for fuel oil have boosted heavy stocks.

Santa Fe Springs continues its swing upward and bears evidence of a still greater gain. Unlike the usual development of a field, production has shown a sharp increase for seven consecutive weeks. The usual breathing spells have not come, so rapid has been the completions. The sudden rise of the field has reduced the payment of premiums to a minimum and may erase this differential entirely. The independents have not developed sufficient production to offer crude at attractive prices.

The gasoline war which has been raging in California for three weeks is nearing an end. Gasoline is being sold at nearly all stations at about three cents under the recognized posted price, but a return to the old scale is expected soon. The independent dealers are negotiating for a stabilized schedule and it is understood that the major marketing companies are willing to meet their increase.

The recent reduction in fuel oil prices has had a depressing effect on the movement of this commodity. In reducing the posted price at San Pedro to 85 cents, the purchasing companies wanted to bring the posted price in line with the actual prices paid. The gap was reduced, but the spot price also suffered a slight relapse as well. Fuel oil is moving at prices up to 15 cents below the new schedule.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

Busy Year of Drilling Ahead in South Louisiana

HOUSTON.—Although there was an unusually large amount of drilling in virgin territories in South Louisiana in 1928, as compared with any previous time, there is likely to be even more in 1929. Throughout the past year the chief concern was in finding new domes. Some of the domes which had previously been found were drilled on slowly and sparingly, and others were left untouched. But during the past month or so some attention has been diverted to the domes already found, and there are now seven supposed salt domes in Southern Louisiana, found by geophysical instruments, which are being tested for the first time by actual drilling.

In addition to the four new locations which it has made in Terrebonne Parish, The Texas Company is testing a geophysical prospect in St. Landry Parish; Botany Bay Fee 1 on that supposed dome is drilling shale at 3560 feet. It encountered a sand at 3450 feet, but there was no indication of oil in it. This is known as the Port Barre dome. It is about 18 miles north of Anse La Butte, and approximately 20 miles northwest of Bayou Bouillon dome. The Texas Company's test is located 8100 feet south and 3200 feet west of the northeast corner of T. 6s, R. 5e.

The two other geophysically discovered domes which are being tested for the first time are Darrow, Ascension Parish, and Spanish Pass, Plaquemines Parish. In each case the Gulf Refining Company of Louisiana is the company which will do the drilling. Its test at Darrow is the Belle Helene Sugar Company 1, located 100 feet each way out of the northwest corner of Lot 17 in Section 27-10s-2e. As yet it is only a location. This is the second dome of South Louisiana east of the Mississippi to be drilled upon, the other being Sorrento, in the same parish. Darrow is practically on the Mississippi. It is about 12 miles east of Sorrento, where Gulf Refining Company has completed several good wells which produce from the cap rock around 1650 feet; and is about half-way on a direct line between Sorrento and White Castle dome. At White Castle the Shell Petroleum Corporation last year found a little oil in one well and penetrated cap rock.

Gulf Refining Company's new test in Plaquemines Parish is on what is called the Spanish Pass dome. Its location is 1340 feet east and 1340 feet north of the southwest corner of Section 26-21s-30e, and it is reported to be rigging up. This is the Morris & Rose 1.

This dome in Plaquemines Parish is the most easterly dome that has been discovered in Louisiana, being in that extreme eastern tip of the state which juts out into the Gulf of Mexico as the swampy peninsula at the mouth of the Mississippi. The dome is about four miles southwest of the town of Venice.

Deep Producer at Humble Holding Up Flow

Houston.—Cullen & West's Morris 1, discovery well of a new mile-deep sand in the Humble field, has not fallen off materially in production, its present yield being still around 1600 barrels per day. The owners of this well, operating as the South Texas Petroleum Company, are down 1255 feet in the first offset to the deep producer, Morris 3.

This new deep well is in the southeast part of the field, and is producing 44 gravity oil from 5347 feet.

In the north extension of the field, on the north side of the San Jacinto River, The Texas Company is drilling at 3790 feet in House 22.

Houston.—Humphreys Corporation's Kirby C-1, new deep producer on the east flank of Barbers Hill, Chambers County, continues a good well, flowing around 1400 barrels per day. Average daily production of the field for the past week was approximately 2100 barrels.

Sulphur Deposit Is Found In Lake Peigneur Test

Houston.—Jefferson Lake Oil Company, New Orleans, is reported to be drilling in sulphur in Lake Peigneur 1, Iberia Parish, Louisiana, at 738 feet, after topping it at 666 feet, making at least a 72-foot thickness of the sulphur, and indicating the existence there of an important commercial deposit of sulphur.

This test is on a location adjacent to the Jefferson Island salt dome, being north-northeast of the dome, in Lake Peigneur, 1500 feet from land. It is reached by a tram-way.

Lake Peigneur is about one mile wide and two miles long, lying north, west and southwest of the Jefferson Island salt dome; and the Jefferson Lake Oil Company has a lease on it from the State of Louisiana. The test is a few hundred feet from a bubbling gas pool.

Two New Texas Coast Domes Get Tests

Houston.—In addition to the extensive drilling program which it has mapped out for nearly a dozen newly found salt domes in South Louisiana, The Texas Company is doing considerable wildcatting in the Texas division of the Gulf Coast; among the tests in Coastal Texas being one each on two geophysically discovered areas: in Orange County and in Waller County.

The Texas Company is rigging up on Kuhn 1 on a supposed dome in Orange County just east of the Neches River. The test is located 600 feet south and 400 feet west of the northeast corner of the H. J. Kuhn 1199 acre tract in the Mary E. Hall survey. Indications of a dome were found there last year by means of geophysical instruments. This supposed dome is on a direct line between the Spindle Top and Orange fields, being about four miles east of the former and five miles west of the latter. It is about four miles north of Port Neches, on the Neches River, where The Texas Company operates an asphalt plant.

The new test of The Texas Company in Waller County is Young 1, and derrick is now being built. Indications of a salt dome were reported there by James C. Templeton of the Geophysical Prospecting Company, Houston, as the result of a torsion balance survey in the summer of 1927, made for John R. Young who drilled two tests there on the basis of that survey. His Fee 1 was abandoned at 2075 feet, and Fee 2 was abandoned at 1500 feet, neither test having encountered oil showings or dome formation.

This Young's ranch prospect is in the west end of Waller County, being two miles east of the Brazos River and about three miles east of the Raccoon Bend field. It is not known whether Raccoon Bend is a salt dome or an anticline; but regardless of which it is, it is possible that the same sands which have been found at Raccoon Bend extend as far as Young's ranch.

Louisiana--Arkansas Field Notes

Champagnolle Production Extended In Two Directions

SHREVEPORT, La.—Extension of the Champagnolle field in two directions, and formal announcement of plans for laying a 450-mile gas line from the Monroe and Richland gas fields in North Louisiana to St. Louis, furnished the two chief items of interest in the Shreveport territory during the week.

While neither of the two wells extending Champagnolle appear in the official list of completions for the week, a 24-hour gauge not having been immediately obtained, both wells exceeded what drill stem tests had promised for them.

In the northeast extension of Champagnolle, Ohio Oil Company completed Carroll 3, in the SWC SE NW, Section 6-17-13, in the Crain sand around 3000 feet, making an estimated flow of 300 barrels daily. The well extends production an eighth of a mile northeast.

On the southeast side of the Champagnolle pool, in Section 15-17-14, O. W. Estes and associates completed Gregory 1, in 17 feet of sand with total depth of 2852 feet, making an estimated yield of 35 million cubic feet of gas with a heavy spray of oil. The test is closed in awaiting storage. The well extends the field a quarter of a mile south.

On the west edge of Champagnolle, Oil Well Corporation apparently has abandoned its intention of making a deep test of Kelly A-2, in Section 9-17-14, and has cemented back to 2824 feet where bailing is under way. On the northeast side of the field, however, the Lion Oil Refining Company is drilling in red beds at 3995 feet in Union Sawmill Company 5, in Section 7-17-13.

Deep test interest was not confined to Champagnolle. In the old Haynesville field, Smitherman and McDonald were bailing at 4300 feet in Miller 1, in Section 17-23-8, where an interesting sand had been encountered. A strong gas show at that level was assigned as the primary reason for bailing, this being done more as a matter of protection than for completion at that depth. Gulf Refining Company recently acquired a half interest in the Miller test. Another deep test in Claiborne Parish is that of Dixie Oil Company in Gilbert 1, Section 27-21-5w, which is drilling in shale at 4900 feet.

W. P. Wallace's Ashley 1, in Section 15-16-10, of the Lake Bisteneau district of Bienville Parish, Louisiana, where several small gassers have been completed in spasmodic drilling there in recent years, surprised operators during last week when it gauged eight million feet daily. Total depth is 2005 feet. The well at first had been estimated as good for only one million feet. Wallace has already made location for an offset, State 1, in Section 16-16-10, and is already rigging up.

Line to St. Louis

After approximately 18 months of rumors formal announcement was made during the week that a $30,000,000 company, the Mississippi River Fuel Corporation has been formed for construction of the 22-inch pipe line from the Monroe and Richland gas fields to St. Louis to furnish industrial gas to that city and intermediate points. The line will be laid west of the Mississippi River until it reaches St. Louis, when it will cross to furnish East St. Louis and other Illinois municipalities. Construction will start immediately.

Companies interested in the new firm and controlling 262,000 acres in the two gas areas are: Standard Oil Company of New Jersey, Palmer Corporation of Louisiana, United Gas Corporation, Columbian Carbon Company, the Electric Power & Light Company of New York, and the United Carbon Company.

Completions Better

Magnolia Petroleum Company completed Dillon 18, in Section 24-21-15, Pine Island district, in the Trinity at 3790 feet, making five barrels of oil and 150 barrels of salt water.

Little Fay Oil Company, in Ouachita County, Arkansas, added Cannada 1, in Section 24-15-16, at 2058 feet, as a 15 barrel pumper, while in the Ouachita side of the old Smackover field, the Shell Petroleum Corporation went back into Williams 4, in Section 34-15-15, and completed the test at 1959 feet pumping 260 barrels of clean oil.

Marine Oil Company's J. F. Sample 2, Section 7-17-13, in the northeast sector of Champagnolle, flowing 700 barrels of oil and making 15 million feet of gas at total depth of 3051 feet. In the center of old Champagnolle field Rushing and associates completed Gregory 7, Section 11-17-14, at 3214 feet, flowing 106 barrels of oil and 319 barrels of salt water.

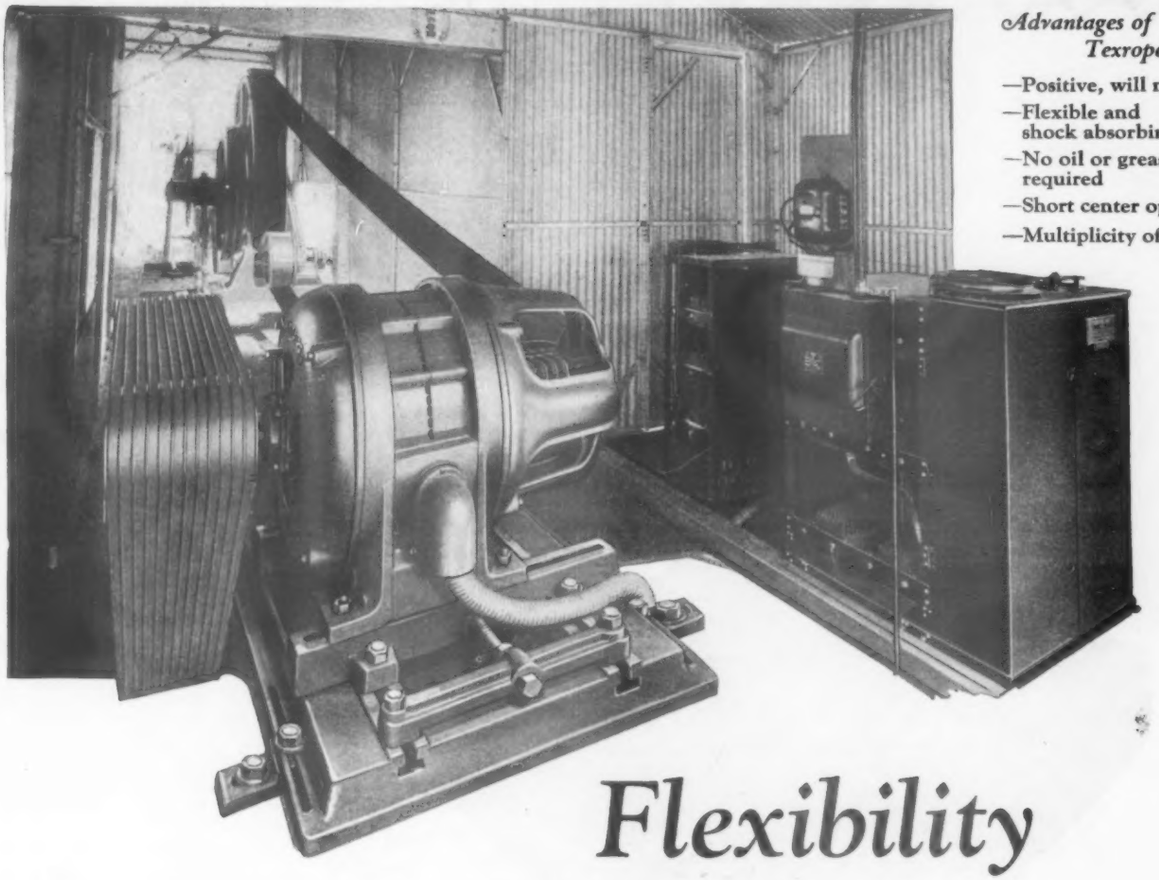
G. E. Jordan, after drilling to 3347 feet in C. J. Wall 1, Section 12-18-3e, on the southwest edge of Ouachita Parish, plugged back to 2300 feet and completed the well as a half million foot gasser. In the same parish the Interstate Natural Gas Company added Hodges 1, in Section 4-19-3e, as a three and a half million foot well at total depth of 2185 feet.

The 2800 foot horizon in Bethany, Panola County, East Texas, yielded a one million foot well when S. H. Gardner and associates completed Lawless 1, in the J. L. Matthews survey, at 2804 feet, with eight feet of broken sand.

On the southwest side of the old Sarepta gas field where there has been a flurry of drilling since several oil producers were added recently, Northwest Louisiana Gas Company encountered salt water and abandoned Pinewoods Lumber Company 9, Section 37-23-11, Webster Parish, at total depth of 3100 feet. Champagnolle recorded two failures, H. L. Hunt's Gregory 12, Section 10-17-14, testing dry at 2200 feet, and Skelly Oil Company's J. M. Gregory 1, Section 15-17-14, testing salt water at 2610 feet. It was the third completion of this test.

Shreveport Oil Corporation is rigging up for Chesire 1, Section 32-21-15, Pine Island district. As already mentioned W. P. Wallace is rigging up for State 1 in 16-16-10, Bienville Parish. Benedum and Trees will drill a wildcat in the Frierson district of DeSoto Parish, and have derrick up for Nicholson 1, in Section 2-15-14. In the old Coushatta area of Red River Parish, C. H. Tuttle has derrick up for C. H. Tlttle 1, Section 17-13-10. Three new locations were announced for the Monroe gas field. Industrial Gas Company has made location for Mrs. M. E. Hill 3, Section 9-20-3e, Union Parish, and Stovall Drilling Company in the same parish has spudded in Etheridge 2 in Section 22-20-4e. La-Del Oil Properties, Inc., has made location for Fee 46 in Section 6-19-5e, Ouachita Parish.

The Lucknow district of Richland Parish secured four new locations during the week, all having been made by Carbon Gas Company, Inc. The locations are: M. L. McCoy 1, Section 8-16-6e; Roberts 1, Section 21-16-6e; W. T. Sarter 1, Section 16-16-6e; and W. T. Sarter 2, Section 16-16-6e.



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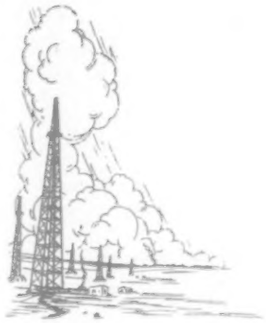

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Oklahoma--Kansas Field Notes

WARREN BAKER, *Staff Representative, Tulsa, Oklahoma*

Mission to Have Many Wells Ready When Proration Is Lifted

TULSA.—The Mission pool of the Greater Seminole district due to the large number of wells nearing and shutting down on top of the sand is attracting more attention than any other Oklahoma field. The wells are shutting down awaiting the lifting of drilling restrictions February 10.

More than 20 wells are shutdown on top of the sand and that many more are expected to be ready before expiration shutdown agreement. Wells shutdown on top of the pay are all showing oil, but many of them are not looking any too promising and several may encounter water when deepened.

During the week three new wells showed water, bringing the total to five. Gypsy Oil Company's Mission 3, SW SE SW Section 5-8-6, has the Wilcox sand from 4395-4405 feet with 3000 feet of water in the hole and some oil. Prairie Oil & Gas Company's Micco 1, SE S WSE Section 5-8-6, on the east side of the field, has a hole full of water at 4350-65 feet and will be plugged back to 4325 feet. It is a diagonal northwest offset to the Twin State Oil Company's producer in Section 8-8-6. Prairie Oil & Gas Company's Townsend 1, C S L NE SW Section 6-8-6, has 3000 feet of water in the hole from the Simpson sand.

Future drilling at Mission will be determined at a meeting to be held in Tulsa, February 11. Since the crude cut and disappointing outlook at Mission it is possible that operators may decide to delay the starting of a second crop of wells.

Maud a Future Market Threat

The Maud district Wilcox sand continues to be looked upon quite highly by many operators despite the lack of encouraging results. A number of completions will shortly be made in the territory, and in the meantime efforts are being made to hold drilling activity to a minimum.

Tidal Oil Company's Everetts 1, SEc SW SW Section 18-8-5, in western Maud, carried the Misener sand producing region two locations west. The well topped the Misener at 4193 feet and at 4209 feet flowed 845 barrels in 24 hours.

Gypsy Oil Company opened up Bourassa 1, SEc NE Section 7-8-5, discovery west Maud well. It flowed 1180 barrels in 24 hours through a one-half-inch choke. This well was completed in August, 1928, for 2100 barrels from the Hunton lime at 4110-23 feet.

T. B. Slick's Wyeka 1, Section 24-5-7e, southwest of the Allen field, has a hole full of water from 4550-57 feet.

Sinclair Oil & Gas Company's Jefferson 1, Section 23-5-7, diagonal northwest offset to the Slick failure, has the top of the Viola lime at 4019 feet and is running 132 feet higher, which is causing many to believe that commercial production will be found in the lower horizons of southwest Allen, despite failure of the Slick test.

Shell Petroleum Corporation's Livingston 1, Section 33-7-5, southeast extension of the St. Louis pool, is filling up with water after drilling to 4580 feet in the Wilcox sand found at 4565 feet.

Another Wilcox failure was added in the northern area of west Maud. It was Shell Petroleum Corporation's Wylie 1, SW NW NW Section 8-8-5. It has 1200 feet of water in the hole from 4355-60 feet.

T. B. Slick and White Eagle Oil & Refining Company's Villines 1, NWc SE Section 20-8-5, southeast of Misener sand production, western Maud pool, has 3000 feet of water and 1500 feet of oil in the hole from the Simpson sand at 4468-4522 feet. This well defines the Misener producing area, which is now pretty well established to the south.

Wildcat Holds Interest in Oklahoma City Area

Showings of oil were found in the T. B. Slick's Sudik 1, C NE NE Section 8-10-2w, Cleveland County, five miles south of the Oklahoma City pool. A trace of oil was found in a core at 3910 feet, another showing encountered at 4200-10 feet, with one from 4245-50 feet. A sandy shale formation at 4260-70 feet also showed oil. The test is coring ahead slowly. Although the showings were not thought to be of commercial value they were of great importance. The well seems to be running pretty well in comparison with the discovery well at Oklahoma City.

Indian Territory and Foster Petroleum's Foster 1, C NE SW Section 24-11-3w, had an oil showing in a core from 3071-74 feet, and another at 3073-79 feet. The deepest drilling well in the field proper is Ramsey Petroleum Corporation's Fortson 1, C SW NE Section 24-11-3w, which is drilling below 3850 feet.

The Oklahoma City discovery well is still producing more than 5625 barrels daily, although nearly two months old.

Cromwell-Franklin Oil Company's Thompson 1, SEc Section 15-12-3w, two miles north of Oklahoma City, and eight miles north of the field, has topped a green shale at 7131 feet and is drilling ahead at about 50 feet in the formation. The top of the Wilcox sand was found at 6938 feet. It is the deepest test ever drilled in Oklahoma.

Allen Producer Cutting

Sinclair Oil & Gas Company's Amos 2-B, SE NE SW Section 7-5n-8e, discovery Wilcox sand well of the Allen field, commenced cutting early last week and has showed a rapid increase in its water output, while its oil output has declined nearly half. The well is now doing 975 barrels of oil per day, cutting six per cent.

Sinclair Oil & Gas Company's Bruno 2, C S L N½ NE 26-7-4, on the extreme west edge of the St. Louis field, has been placed on gas lift and did 85 barrels per hour. This test has the Wilcox sand from 4173-4209 feet. Pure Oil Company's Thomas 4, east offset to Bruno 2, was also put on gas pressure and did 2692 barrels in 12 hours.

Superior Wildcat Is Dry

The important wildcat test of Superior Oil Corporation's in SWc NW NE Section 24-8-2, near Macomb, Pottawatomie County, is drilling ahead after knocking out the plugs on top of the Hunton lime and finding only a very small showing of oil.

Three new dusters were chalked up to the East Little River field and practically ended its development.

The old Beggs district, near Tulsa, was astir with news of the L. C. Wentz, L. C. Wheeler, Campbell and Cothran's Fish 1, SEc NE NE Section 6-15-12, which unexpectedly yielded a large flow of oil that went over the crown block until connections could be made. The well is estimated to have done 100 barrels per hour from the Misener sand at 2400 feet.

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The radio hook-up at the shot-point. The dynamite charge is buried about 200 yards away in the bushes

Home *of* "Gator" *and* Water Lily *Opened for* Oil *by* Science

"Dynamite Buggy" and Pirogue are tools with which wildcatters seek domes in Louisiana Swamps

By WALLACE DAVIS
Staff Representative

THE seismograph has made its mark in oil. The more crooked this mark the better.

The great favor which this instrument of science has gained in the industry in rapid-fire order when once its findings were acceptable might best be seen in the quick change of opinion regarding it. Many of those who laughed at its possibilities in 1925 paid off in big figures for acreage it proved in 1926, buying to the tune of the ticket the seismograph wrote out for them in jagged lines.

Perhaps the seismograph has been more valuable to the industry by virtue of its early reception as something like a joke. In its "doodle bug" days it furnished almost as much amusement for the scoffers as it did interest for its followers. The business at that time needed something light for its grain of salt to go with, and the laughs the seismograph got were even more wholesome in the rebound.

The extent of success of the seismograph as applied to locating subsurface structures, favorable for the accumulation of oil, is seen in the discovery of 42 salt domes in the Gulf Coast territory within the past four years. Thirty-two of these seismograph domes are in South Louisiana and 10 in the Texas section of the Gulf Coast. As history of the Gulf Coast area will bear out, the greater number of discoveries in South Louisiana results from the comparatively small extent to which this region had formerly been explored for oil reserves. Prior to seismograph exploration South Louisiana was comparatively virgin territory, especially the eastern part; hence the hurried success of geophysical research in that region. Too, seismograph had more competition in the Torsion Balance in Coastal Texas.

Seismograph work within the oil industry has served to develop its own methods as well as to develop a new working branch in the industry. The present instruments and methods used in "shooting" prospective territory represent a great change in detail from those introduced into this country from Germany five or more years ago, although the principle is virtually the same.

There are now between 35 and 40 seismograph crews operating in this country. While this number represents a phenomenal increase in the use of this instrument, it shows a temporary lull in the work compared with six months ago. Seismograph programs scheduled for 1929, however, indicate there will be an increase of more than 100 per cent. early this year over any previous amount of this work.

Estimates obtained from supply houses and checked against individual parties in the field reveals that more than 4,500,000 pounds of dynamite have been used in "shooting" during the past three years. This product, selling at an average of approximately 19½ cents per pound, represents the prominent place it has established in the producing branch of the industry recently. With every seismograph crew there are three to five men handling nothing but dynamite. The man in charge of placing the shots is assisted, in most cases, by two laborers, and ordinarily two en are used in transporting dynamite on location.

The larger seismograph parties carry as many as 20 men. Members of the same crew may work together for weeks without seeing each other. There are seimograph operators on the job for two years who have never seen a shot fired. Their business is getting the shot records, and they're not concerned about the other

Scene at a receiving station (tent location) on a mechanical seismograph party. The light proof tent is used for developing film records

work of the crew. They may be within a few hundred yards of the shot-point or as far away as nine miles, according to the kind of records the party chief is after. Likewise the size of the shot may vary from a half pound to 2500 pounds of dynamite. While the average shot runs in the neighborhood of 350 pounds, there have been cases where only a dynamite cap is fired for a short test record.

The average crew commonly has three seismograph machines, each of which has an operator. The three-machine crew carries four radio sets, including one for each operator and one for the "shooter." The party chief is in charge, makes locations, handles the expense of the party and reports findings. A chief observer ordinarily handles permits for shooting on desired acreage and usually precedes the "shooting" crew into an area. In many cases the party chief arranges for shooting permits. Most parties carry an instrument mechanic who repairs radios and seismographs.

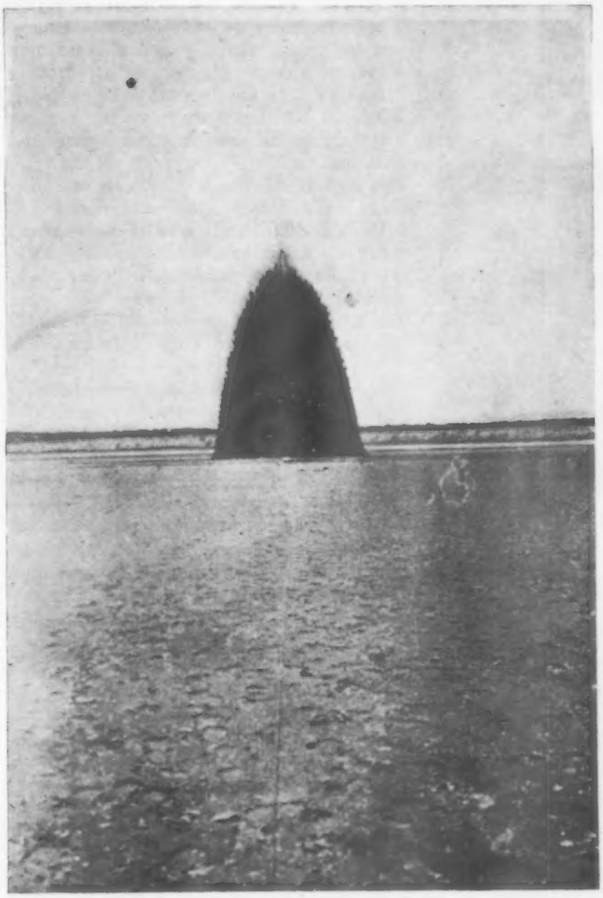
Without going into a technical description of the construction and operation of the seismograph, a brief idea of its inner works and application may well be given here.

A seismic wave or series of waves is set up in the various strata by the explosion of a charge of dynamite. An additional charge is usually exploded on the surface as a source of the sound or air waves used in determining the distance from the shot point to the recorder. The charges are exploded at the same time by electricity, and the exact instant of the firing is transmitted to the recording stations by radio. The distance between the shot point and the recorders are predetermined within limits depending on the particular strata it is desired to explore for sub-surface structures.

The seismograph proper is an instrument designed so as to be sensitive to the very small shock originating from the explosion and transmitted to the recording stations by the sub-surface strata. A film or sensitized photographic paper, calibrated in small time intervals by a mechanism termed the "timer," records the

The "shooter" pulls the trigger. Dim smoke clouds on the extreme left shows the charge firing

Digging the auger-hole for the pot-shot, which opens the hole for the main charge



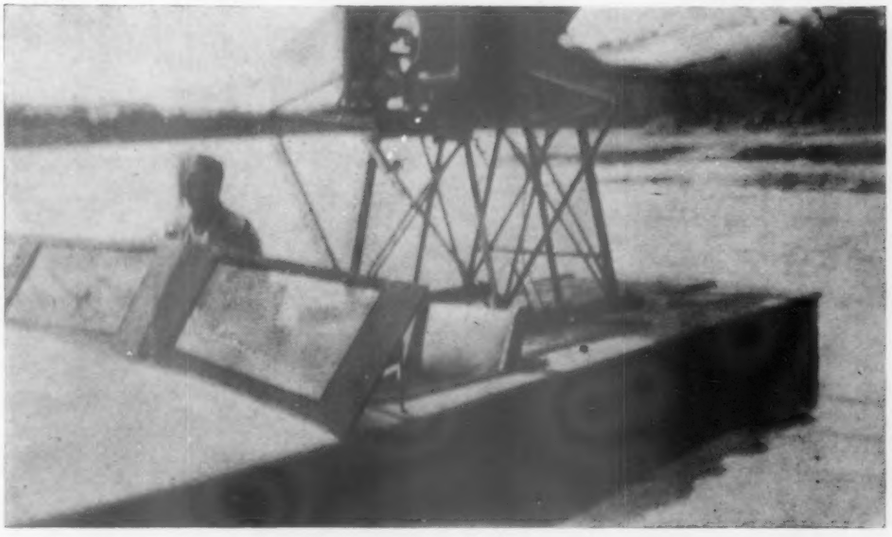
Catching the shot just as it goes off. The soggy swamp soil is shown rising just before it breaks

A beautiful shot scene taken before the smoke started clearing

movement of the seismograph mechanism. This film is put in motion a few seconds before the shot is fired and is continued in motion until after the sound of the shot is heard by the observer. On this film are recorded the exact time the shot is fired, determined by radio, the time of arrival of the various seismic waves and the time of arrival of the sound of air wave; the latter events recorded by the seismograph.

Since the velocity of sound in air is a known function of the temperature of the air and the velocity and direction of the wind, the velocity may be determined when these constants are known. By applying this velocity in air into the time required for the arrival of the sound wave (the time interval on the record between the radio record of the instant the shot was fired and the record of the sound wave picked up by the seismograph) the distance of the recorder from the shot point is determined. The time of arrival of the first seismic or ground wave is also determined from the record, and from a study of the earth, or seismic time for that particular distance certain deductions as to the characteristics of the underlying strata may be made. The analysis of the records is a highly specialized technical process and is usually carried out either by the party chief himself or by the computer, under his supervision.

Among the important changes seen in seismograph work since its introduction in the oil industry, the adoption of the radio as a vital part of the equipment is outstanding. The earliest seismograph parties, of which the leaders were German scientists hiring their services to American oil companies, used portable telephone sets point to point for communication and for recording instant of explosion. While this method was practical and got results, it made the "shooting" job more cumbersome, necessitated more men in the party and more time, thus causing greater expense. Distances between shot-points and receiving stations



Scouts make 45 miles an hour in these propellor-driven speed boats. The shooting party uses them for hurry-up business

Earnest Cockrell, Houston, visits Felicity Island in a "pirogue." It's dangerous to think deep in one of the boats

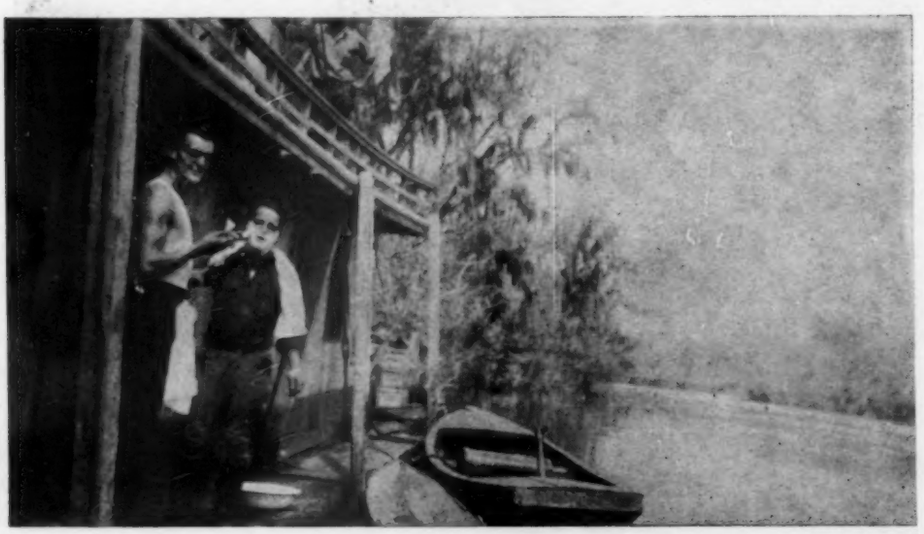
formerly were measured by engineering methods, and the old chain gang was necessary. Furthermore, such methods of measuring distances were in many cases necessarily inaccurate because rivers, bayous, lakes and swamps had to be reckoned with, not to mention jungled bottom-land that defied the law of the straight line. At the present time distances are computed from sound wave "times" as described above.

Another change noticeable in the "evolution" of the field seismograph is the gradual substitution of the old mechanical type by the electrical seismograph. While the working method has been changed a great deal, the principle is practically the same. The mechanical seismograph required the use of a small light proof tent, which served as a dark-room for developing the records as they were made.

The first stage of the seismograph's use in structure finding was highly secretive. Representatives of the makers of the machines handled the technical end of the work, and all machines were leased by the owners rather than sold. Outside of the German scientist who served as party chief, little was known of the working program, even by the men on the job. The party chief was allotted certain acreage to "shoot" and a practical lease man was sent along with the party to secure "shooting" permits from land owners. Findings of the party was reported at intervals to the contracting company, and that was that. The average oil man regarded seismograph exploration as something of a surreptitious experiment, and little less than death penalty was figured to result from peeping in on the work. There are alert youngsters with wide field training who served seismograph parties for a year and came out not knowing a seismograph from a coffee grinder. The funny part about it is, one is about as simple as the other when the former is explained in common oil-field English.

During the past two years, since the maze of this delicately scientific instrument has been fairly well overcome and reasonably appreciated, numerous major producing concerns have quit leasing the German "tailor-made" seismographs and started "rolling their own." The common thing nowadays in the seismograph business is to see the operators making their own machines and hiring their own crews. You can apply right in the office just like you wanted a clerk's job, and maybe you're accepted to go out and help run the thing. A high-school education is preferable, and knowing something about radio comes in handy. The job pays better than the average oil field job, and it's worth it. In the seismograph business as in most other businesses, however, the smarter and more apt the crew members, the better the job, and it is interesting to note that the average crew is made up of college men, many of whom are degree holders. Some companies in particular have made especial effort to secure college men, preferably engineers, for their seismograph crews. After seeing some of the working sites of these crews, as

Houseboat life on a South Louisiana bayou. This serves as the home for the water-shooting party



Cleaning up for the vacation that comes with the end of each long water-shooting job. The launch takes them back to civilization occasionally

the jungled swamps of Southern Louisiana, the writer is prone to suggest that four years of college football and swimming training might not be a bad prerequisite for seismograph work along with the knowledge of physics, raido and what not.

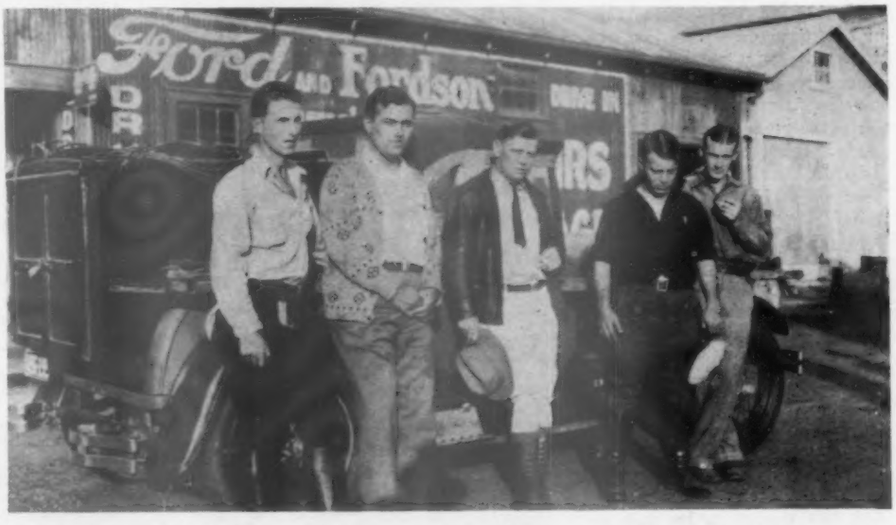
Since the seismograph has been found practical in water "shooting," exploring the possibilities of lake bottoms in the Gulf Coast has become a popular sport. It has resulted in the work being divided into two common terms — land and water "shooting." The latter affords a life that is as interesting as it is weary, and brings something new into the oil industry. The organization of a water shooting party and preparation for a campaign of work is apparently not greatly unlike preparations for a foreign expedition. The first requirement is a house-boat of no small size, equipped with boatman, a cook, and food supply of several weeks for 20 to 25 men. One or more gasoline launches are ordinarily found necessary, and a small fleet of pirogues are usually taken along unless accessible where the party is scheduled to do its work. The launches are necessary for transacting quick business and for negotiating places where the houseboat will not reach.

Scene after the dynamite charge has been fired. A crate of dynamite furnishes crew members with a good seat

Two members of crew standing on three tons of dynamite hauled to the swamps for shooting

Without doubt the pirogue is the most interesting means of transportation used in the lake and swamp country. The average pirogue is about 10 feet long, as many inches deep, and just wasn't designed for a fat man to sit in. With two average size men aboard, the pirogue lacks one inch of dipping water, so the two passengers usually have to think about the same thing to keep dry. There's an art at handling the pirogue, for the cajan boatmen of the South Louisiana lake region can make them dart in and out of the narrow passages at an uncanny speed. Pirogue trips are through shallow water mainly, and often long push-poles are used instead of oars. They are handled with one instead of two oars, and with the proper "English" applied, a single side-stroke is used altogether. One miscue in a pirogue though, and you're gone.

In many cases the natives of this territory have cut artificial canals about a foot deep and three feet wide from one small lake or bayou to another to avoid roundabout boat trips; and while the skilled boatman takes his passenger through one of these the latter can pick flowers on



A mixed gang at Thibodaux, Louisiana, with a seismograph equipped car. Left to right: E. B. Hill, seismograph operator, Humble O. & R. Co.; W. F. Weed, Shell scout; L. W. Uloth, E. F. Simms land department; John Pollard and R. C. Clark, seismograph operators, Humble O. & R. Co.

both sides of the canal at once. The thought of picking flowers while riding in a pirogue no doubt has the same sad origin with most passengers, however, and you usually just sit and wait for developments. It might pertinartly be stated here that this swamp country respects no aristocracy nor title, and any man, though he be chairman of the board of his own prided company, is just as low down as his pirogue sinks when he goes out on an inspection tour in this land where nature saw fit to be so liberal with her salt domes.

In water "shooting" the seismograph proper, commonly called geophone, or detector is suspended in the bayou, lake or swamp, as the case may be, and the cable connecting it to the electrical recording device is set up on the boat as is the shooter's radio. The shot-point is usually fixed at the crew's boat, while receiving stations are placed at intervals by the party chief. The operators make location in pirogues, or larger crafts, if such transportation is possible. Much of the labor involved in placing dynamite charges for land shooting is eliminated in preparing water shots. The charge is simply dropped overboard with the dynamite crates sufficiently broken open to sink, and the boat is withdrawn. As in land shooting, the firing is done by means of the electrical switch. Land shots require the digging of an auger-hole for a pot-shot, which blasts a hole sufficiently large to take dynamite for the main shot.

Making locations for receiving stations is outstanding as the difficult job in water "shooting." The bottom-land in swamp territory is so stubbled with underbrush that vision for any distance is cut off. Directions cannot be determined from the flow of streams due to the presence of three or four cross currents in the same stream. Topography serves as no guide. The crew trying to figure distance, as, say two miles, is commonly reduced to plotting their journey in parts; picking certain objects ahead of the boat and checking this leg of the trip off as the particular object is reached. The party chief, who sends his men out by pirogue, cannot figure their approximate time of arrival at a given point since they may be floating with a current one minute and rowing against it the next minute. The compass has never been found entirely satisfactory in calculating distance in the thickly wooded swampland. It's not the direction a man wants to go, but the direction he has to go that figures with negotiating these jungle-clad waters. In an effort to go a mile north he is forced, in some cases, to go two miles in each of the four directions. So, where is he when he gets there?

In determining locations for receiving stations, where points are not definitely given on a map due to cross currents and bad water courses not checking out right, the operator is sent out and his position ascertained by triangulating in with distances determined by sound waves from two known points. He shoots a small dynamite charge, usually five pounds, and the two known points pick up the explosion. Each of these two computes the third's distance and draw arcs which will intersect at his shot-point.

A striking example of the difficulty in following a straight course in the jungled swamps is given by one party chief of a water crew. He sent two men by pirogue a half mile west to string telephone line in the underbrush, and allowed two hours for the job. At the end of this time he failed to get their signal, and waited an extra 15 minutes. He was preparing to signal them for advice when he heard brush breaking due south of him, and located them 600 feet in that direction; still stringing line, but headed east in a horseshoe curve.

One crew, in working out station locations, discovered an unsurveyed section of land not shown on any map. It lies along an old water course in bottom-land, which has been fairly inaccessable to any form of transportation. A single line had been surveyed in the early days of Louisiana's statehood, and other section lines had been computed from it. In the shuffle one section had been entirely left out.

Lilies!! . . . that's the dreaded word of all industries in South Louisiana, and oil company representatives are far from the least of these in their wrath against the lily. It is a stubborn, wirey vegetation, unlike the common variety of water lily, and springs up almost overnight to cover solidly the surface of the swamps, bayous and small lakes. The roots form heavy, twisting nodules, or floats, and hang from six to 15 inches under the water surface; and the leaves stand from three inches to three feet above the water surface. When blooming, the lilies make a pretty scene. These lilies form complete barriers to boat transportation in some places, and hinder navigation generally.

The government has taken steps to alleviate the problem in South Louisiana, but the expense envolved in probable extermination of the growth is considered prohibitive. Seismograph crews have used dynamite to open passages through the lilies, but they are said to grow back together before the smoke is cleared away. Powerful launches, plying the bayous at 12 to 15 miles an hour are forced to a standstill within a few yards after entering a mass of the lilies. The boat is then reversed and cuts again into the mass, proceeding at a slow speed until the lilies begin folding up against the bow. Another reverse and forward run is made, and such is travel at the best in the average lily growth. A pirogue is estimated good for one-half mile per hour in the lilies, with two men kneeling, and by using two oars each, grasped in the middle, and using a downward outward and backward stroke, fair progress can be made. A firm mass of the lilies will support the weight of a man lying flat, and in exceptional cases a man may safely walk on them.

One type of "dynamite buggy" designed to battle the swamp mud. Cross beams are bolted into the wheels

Tradition in the swamp country has it that the entire growth of lilies resulted from a railroad passenger who was carrying a lily pot-plant from Florida to the West, throwing a spring into a Louisiana bayou from a coach window. And today the curse of thousands in that area is on this supposed tormenter, regardless of the intention that accompanied the flipping of that lily spring.

Water "shooting" offers great interest in the surprising inexpensiveness of living on the job. One crew's record shows an average living expense of $1.45 per man per day for six months, including sleeping quarters and meals, plus cost of the houseboat

and equipment, considering the sale of houseboat for 50 per cent. of the cost at the end of that period. This compares with an expense of $4.27 per man per day for the same crew on land for four months.

"Shooting" parties, especially the water crews, work steady, including holidays and Sundays, due to their remoteness from towns and the importance of following a single job to its finish. Then, on completion of a particular job, a short vacation is allowed all hands. Due to the strenuousness of the work and the unnatural living conditions, the average company figures a six-day rest period is necessary each month, or an equivalent period of leave, provided a single job runs longer. While the work of land parties is also practically continuous, this life offers less hardships, with modern accommodations usually accessible for these crews. In fact, hotel expense is the leading item in running land shooting to a figure much higher than the water crew expense.

As a guide to this vast undeveloped region, where practically every common problem has to be faced along with added new ones, the aerial map is generally accepted as the choice. Topographical records taken from the air, if carefully and recently made, come nearer to presenting existing conditions than another possible guide. The aeroplane photograph distinguishes fairly well between lily patches, bayous, swamp lands and stumps. Unless of recent date, however, the aerial photograph may fail to serve its purpose; so rapidly do the conditions change, as fluctuating of water levels in the swamps, changing of stream courses, of the growth of an additional mass of lilies.

The scouting problem in this virgin oil area offers unusual interest since the coming of the seismograph. The "eyes" of the industry marched into the swamps in the shadows of the shooting crews and are on the job, whether it's houseboat life, prodding in the pirogue through lilies or herding a launch among the stumps after hot shooting dope. Scouts in South Louisiana work fast—commonly at the rate of 45 miles an hour in a speed boat propelled by an "air-jammer." Another common scene in scouting this region is the scout living on a houseboat. He, in many cases, has his private boat, manned by a boatman and French chef, naming his trips and captaining the craft from point to point as he sees fit. It sounds like a luxurious life. It's not as good as it sounds.

Cooperation among scouts and shooting crews is as near perfect in South Louisiana as you will find it in an old settled oil field. They mingle together, work and play together. But the scout doesn't read the tape that's winding out of the business end of the seismograph. Those boys are getting the dope though; they have to if the job pays. There are companies spending $1000 a month, and more, keep-

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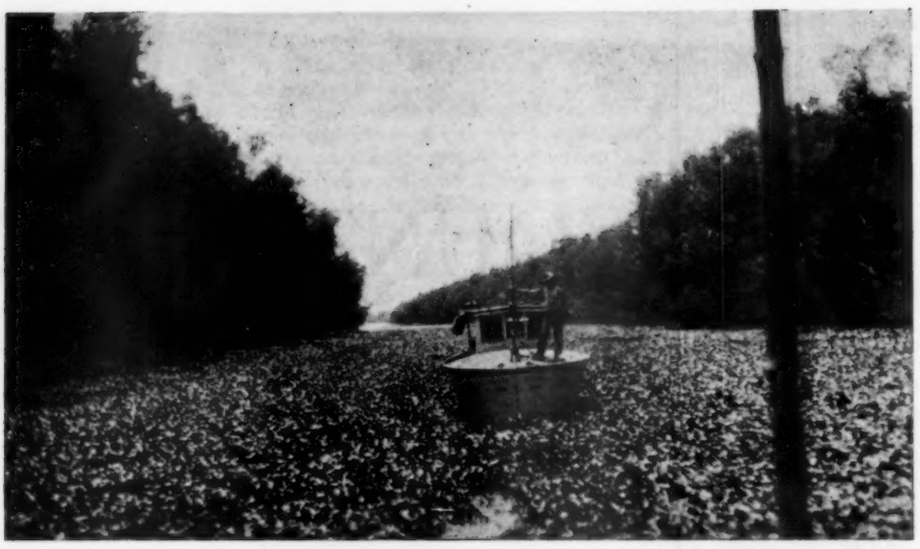

Water lilies grow so prolifically in the bayous and canals of South Louisiana that they are the wildcatter's greatest problem. This picture shows how they have come together as soon as the leading boat has passed. In the right foreground is the radio areal antenna on the bow of the follow-up boat

ing a single scout on the job in this land that's worth a lot, or nothing.

Then there's the dynamite buggy. This is something new in oil. There are two interesting types, both sisters to invention, daughters of necessity, and can best be described as crude vehicles thrown together for the purpose of hauling dynamite through swamps. One is a tractor with wooden cross beams bolted into the four wheels at close intervals. It has made good records at battling the mud covered marshes, and comes in handy especially in soft ground. The other may be the chasis of just any old wrecked car and is equipped with wheels approximately four feet in diameter. Its chief function is to clear the stumps and topographical pimples, and is no slouch at taking ditches at a high speed. Three-foot marsh grass, small saplings and similar obstructions offer little interference to this homemade contraption so vital to this new industry of shooting, the fore-runner of the movement—Own your own Dome.

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Most of Recently Found Domes Were "Shot" After

GAS SEEPS and PARAFFINE DIRT

Showed the Way

By WALLACE DAVIS
Staff Representative

GAS seepage has had an indellible bearing on oil development in the Gulf Coast since the drilling of the first well. Gas escapes at the surface, either on land or water, led to the discovery of the outstanding salt dome fields of this territory until the introduction several years ago of geophysical instruments, and even since then has served to offer a lead to this scientific development resulting in numerous major discoveries.

Specific instances of oil discoveries from gas seep and other indications caused by the escape of gas, as paraffine dirt, will be given here, but the nature of the gas seep, its migration from deep seated sources to the surface, and its results are of wide interest.

Gas commonly migrates to the surface through a fracture. Its course is dependent largely on the forations with which it comes in contact; it takes the course of least resistance. For this reason, the salt dome indicated by a gas seepage may be directly beneath the escape, or it may be a mile or more in any direction. It is for this reason then that wildcatting in the coastal territory has been greatly simplified through use of geophysical instruments, they enabling the operator to determine practically the exact outline of the dome, its position as compared with the seep, and the depth of the cap rock over the dome.

In the early days of exploiting for prospective fields, the operator ordinarily had only the gas seep to determine his locations, except in such cases where the dome resulted in topographical indications, as anticlinal mounds. Today the exploration company can use the gas seep as a dome indication and "shoot" the entire vicinity to determine the position of the dome. It is well to mention here that during the vigorous geophysical exploration campaigns in Coastal Texas and Louisiana of the past few years a major portion of the territory has been "fanned" by the instruments. The chief lack of attention given to gas seepages, however, resulted from the fact that acreage around the seeps was already blocked in nearly every case. The seismograph and torsion balance machines were used simply to check such acreage as offered gas seep indications.

Gas Seep Indications

A check on the new domes found by geophysical instruments will reveal that in practically all cases gas escapes are to be found above or around the domes. Many of the salt intrusions are deep seated, and absolute proof of the presence of the dome is yet to be made. Goose Creek, Orange, Sweet Lake, Lockport and Sugarland fields are important examples of producing fields in the Gulf Coast region where the dome has not been found. The association of oil production with salt domes in this territory to an unusually high percentage, however, emphasizes the theory that there are deep-seated domes underlying these production points.

A salt dome indication probably ranking next to the gas seep is the presence of paraffine dirt. This indication is directly the result of escaping gas, yet changing conditions may have stopped the seepage of gas and still not lessened the prospects of the dome or probable production. Thus, the paraffine dirt indication has also served as a good lead to discovery of production. The so-called paraffine dirt is no more than any surface dirt permeated over a long period with natural gas, and is the result of certain constituents of the gas coming in contact with oxygen and hydrogen, creating a chemical action. Dirt permeated for years by seeping gas becomes a brownish color and takes a soft, soggy, rubber-like texture. It simply acts as a tell-tale on the gas seepage which has ceased its action, most likely because of changing sub-surface conditions.

Sea storms, which directly affect the bayous of Southern Louisiana, and other water disturbances, have often destroyed evidences of gas seepage by floating turf over them, and it may take years for such escapes to again manifest themselves.

In the event of marsh fires gas seeps are often reached, and burn for weeks on occasions until smothered out by rain or whipped out by high winds. In as much as gas escapes of a mild nature may not be evident on dry land, the rainy season is the choice time for locating these dome indications. While it is natural that more gas seeps, for the above reason, are going to be found in water, it is further natural that more seeps will be located in the streams. Common theory has it that a major portion of the bayous of South Louisiana had their origin through fracture, the course of least resistance for migrating gas.

History of Gas Seeps

There is interesting romance in the gas seep. The issuing of natural gas from springs was known in the British Indies, Persia and China many centuries ago, and, while the gas was never commercialized, the seepages were feared, and worshipped as the workings of a fire "god" by the natives. Fissures in the earth seeping gas were lighted and worshipped, evidences of which are revealed in the ruins of an ancient temple near the site of a burning gas well near Baku, Russia. Westcott, in his History of Natural Gas,

Visiting a Felicity Island gas seep which flares three feet high when lighted. Left to right: Native boatman, C. H. Lane with the E. F. Simms interests, Earnest Cockrell, Houston, and assistant boatman. Note the swamp grass growing knee-high on this uninhabited island

relates the incident of George Washington, as early as 1775 dedicating to his country, as a national park, a tract of land in West Virginia, which contained a burning spring. The first discovery of natural gas by drilling in the United States was made in Ohio and West Virginia while drilling for salt, and dates back to early in the nineteenth century.

The village of Fredonia, New. York, found occasion to commercialize escaping gas from a crevice. Gas bubbles were detected on the surface of a stream, and a 1½-inch hole drilled through limestone formation from under which the gas was seeping. Production from the seep was candled through the hole and, by the setting of a gasometer over the hole, natural gas is piped throughout the village and used for lighting purposes.

Following the lead offered by gas bubbles a mile and a half from shore in the shallow waters of Lake Erie, a well was drilled in 1912 through ice and piped to land for commercial use.

Captain A. F. Lucas, discoverer of Spindle Top oil field January 10, 1901, discovered the relation between sulphuretted hydrogen fumoroles, gas springs and sulphur incrustations at the surface and the bodies of subterranean oil, which caused him to first attempt drilling in artesian oil flow.

Interesting history is woven around some of the early known gas seeps of the Texas and Louisiana coast. At the site of the present Sour Lake field, Hardin County, several gas boils brought sulphur and medicinal water to the surface. Around these boils Indian established their camp while on their annual hunt. The children, the sick and infirm members of the tribe were left here in care of the women while the men spread out over the surrounding territory for big game. The sick were treated by mud baths and were given mineral waters from the springs to drink. Following removal of the Indians the vicinity of the gas springs became a famous health resort, and the Sour Lake Springs Hotel was constructed, and health baths were established. Dr. Mud, an old Indian medicine man, was conspicuous around this resort for many years. The gas seeps were taken as oil indications shortly after the Spindle Top discovery, and Sour Lake field resulted shortly. Similar evidences were present at Batson and Saratoga, leading to discovery of these historical fields.

In Tabbs Bay, site of the present Goose Creek oil field, a strong gas escape was noted about 500 feet from the shore. Fishermen had called the surface disturbances fish bubbles prior to Spindle Top's discovery, but oil operators recognized the value of the bubbles about 1901. After the recovery of millions of barrels of oil and release of billions of cubic feet of gas from this field, the gas continues to escape at the same point.

Over Pierce Junction salt dome, seven miles south of Houston, where more than 10,000 barrels of oil daily is now produced, there existed a violent gas seep before 1900. In the early development program scouts working in this area used to light the gas seep at night and sit around the fire to discuss operations and swap dope.

A gas escape in Big Creek, location of Big Creek field, Fort Bend County, was the first indication of oil at this point. This gas made flows through the waters of the creek intermittently, but attracted wide attention long before oil development began there. The recently developed Raccoon Bend field, Austin County, Texas, got its first drilling after a vast amount of acreage had been blocked from gas seep indications.

In Vermillion Bay, Iberia Parish, Louisiana, there is a gas boil covering space of a quarter of an acre. The bay was leased in its entirety by Louisiana Land & Exploration Company, and use of the seismograph followed. Drilling later encountered the top of the salt at around 900 feet, close to the big gas escape. In lower Terrebonne and Lafourche Parishes a number of salt domes have been located by geophysical work, and in each case gas seeps are present. Gas seeps are evident in several places in Snake Bayou, which crosses the known dome on Hackberry Island, Louisiana. Gas seeps were known at Vinton and Anse-La-Butte, Louisiana, many years prior to drilling that resulted in oil production. Gas bubbles attracted early attention in an old pond at Sulphur, Louisiana, leading to drilling that discovered one of the leading sulphur deposits of the world.

The blocking of acreage around the site of Lockport field, near Lake Charles, was done on indications offered by seeping gas in the edge of the marsh in which the field is located. The distance of greatest oil production or gas pressure from the gas seep is well demonstrated at Lockport. The original seep attracting attention here had only enough pressure to penetrate about six inches of water. A well drilled more than a mile from the seep developed 1900 pounds pressure to the square inch, one of the highest pressures registered by a well in this territory.

Numerous tricks have been played by gas in the Gulf Coast oil fields which demonstrate the freakishness of its performance. The most uncanny of these came in a wildcat test being drilled near Goose Creek in 1918, and there are hundreds of witnesses who would rather tell of it than experience the occurance again. C. T. Rucker's Gillette 1 blew in with a terrific gas pressure, and a large crowd gathered around the derrick, highly excited at the discovery. The well was shut in, resulting in the pressure breaking through the hole slightly under the surface and undermining the top layer of hard, crusty surface formation. Suddenly the entire ground layer for approximately an acre around the well rose nearly a

(Continued on page 88)

Discovery Gas Well

The accompanying photograph shows the discovery well of Houma, Louisiana, gas field, which blew wild for 99 days, flowing 90,000,000 cubic feet of gas under 1048 pounds pressure from the big pay around 2300 feet.

This well, Lirette 1, was drilled in 1912 by I. N. Knapp, who started development from gas seep indications. Ten wells were drilled, and more than five billion cubic feet of gas was recovered for fuel in sugar refineries and for domestic use in Houma.

Recently the field has laid dormant, lacking new development. The recent purchase of all of the leases in and around the field through Frank Wurloz of Houma, by C. H. Lane for the E. F. Simms interests of Houston, however, is due to mark the revival of production. Activity for new gas production and possible pay is scheduled to be started within the near future. Possible oil pay is indicated by showings found in a test drilled to 4800 feet and never completed. Gas production, which is proved, will be the initial objective, however.

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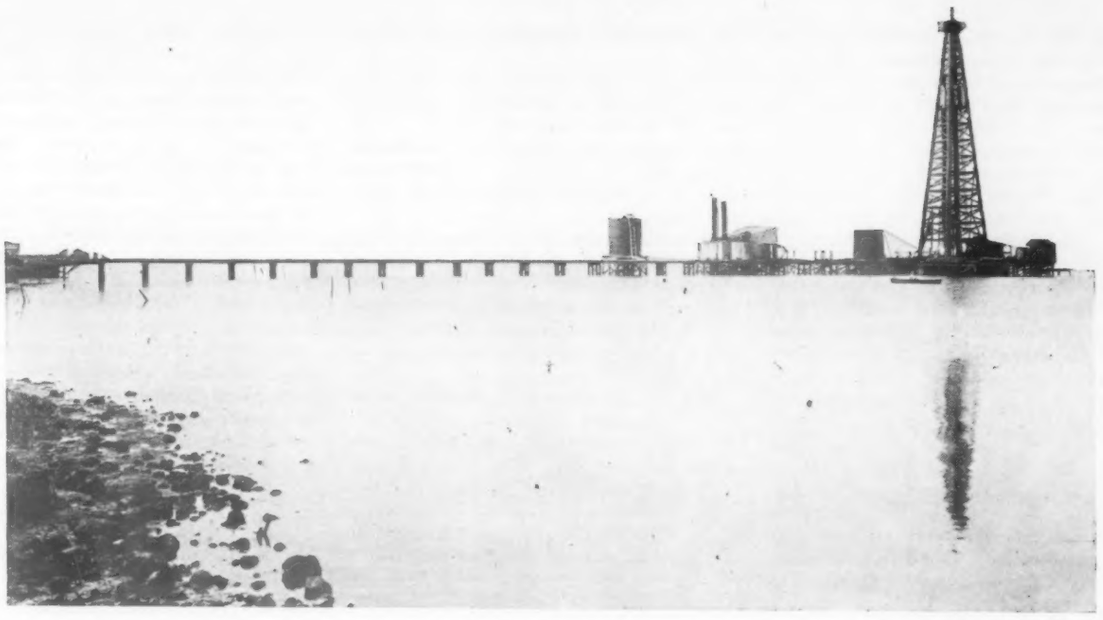


A near-shore operation, where the bridge for hauling equipment is the more practical in water drilling

Wildcatters Will Seek Oil in Louisiana Maritime Zone

By WALLACE DAVIS
Staff Representative

IT'S nice to have a guide in South Louisiana — he's so much company when you're lost!

Development of oil sources in this virgin land of twisting bayous, jungled swamps and thousands of lakes has evolved some of the most perplexing situations encountered in the history of wildcatting. Producing the oil after its source is found comes under a different category, and is handed down to a different department. But they're doing both, and to entire satisfaction.

Now it develops that these pioneers have been practicing oil hunting and producing in the swamps and lakes — they're setting out to drill the Gulf of Mexico!

When the Register of the Louisiana Land Office recently signed a contract leasing the maritime zone in its entirety to a single concern for oil and gas development, something new, at least in size, was undertaken in the industry. This lease, covering the water expansion of the gulf from the accepted shore line to a point owned by the state, in one direction, and from the east to the west boundaries of the state in another direction. This single lease would cover, as a minimum, in the neighborhood of 900 square miles.

This location is three miles from land, and is more economically handled by moving equipment and men in boats. Concrete piling is sunk as a foundation for all equipment

Offhand, the development of such a lease sounds like a hard job. Considering known conditions and the past performance of operators in South Louisiana and other areas of water development, it appears that it will be worked out comparatively simply. Development of production in Maracaibo Lake, Venezuela, the beach fields along the California Coast, Tabbs Bay production at Goose Creek, Texas, the extensive bay waters of South Louisiana, and others, has been done successfully; and, while drilling the immense region covered by the maritime zone of Southern Louisiana presents a further step in water development, it offers nothing that could be considered even improbable.

Maracaibo Lake waters, however protected, commonly see stormy conditions of no little problem. The same thing applies to beach drilling and bays, where rough waters have shown little destructive effects

against the workings of oil operators.

The accompanying illustration is a geodetic map worked from government surveys showing the "highs" and "lows" on the floor of the Gulf. The information was obtained by taking soundings, and lines covering the three-five and 10-fathom zone are given. Within these particular zones markings at close intervals show individual depths, and every fluctuation of any importance is given. It is these geodetic soundings which will give the operators their leading basis for locations; and, through a study of the results of these surveys the available information presents the bed of the gulf as would a topographical map of the same expanse of land. Salt dome indications here are presented in even a plainer form since the floor of the gulf is kept level as far as unstable sediment is concerned. The uplifts existing by reason of their ability to weather the elements serve as more real indications that land uplifts, which might go for decades without material disturbance.

The high points under the water serve the operator as he would have made them for his perfect convenience. It is the high points that offer best possibilities for producing, and it is the high points that allow the best conditions for development.

Naturally, logical development will bring the first or three-fathom zone into the first stage of development, unless ideal indications, as gas seeps or outstanding "highs" at a greater distance from shore, offer encouraging prospects in the outer rim of the maritime zone.

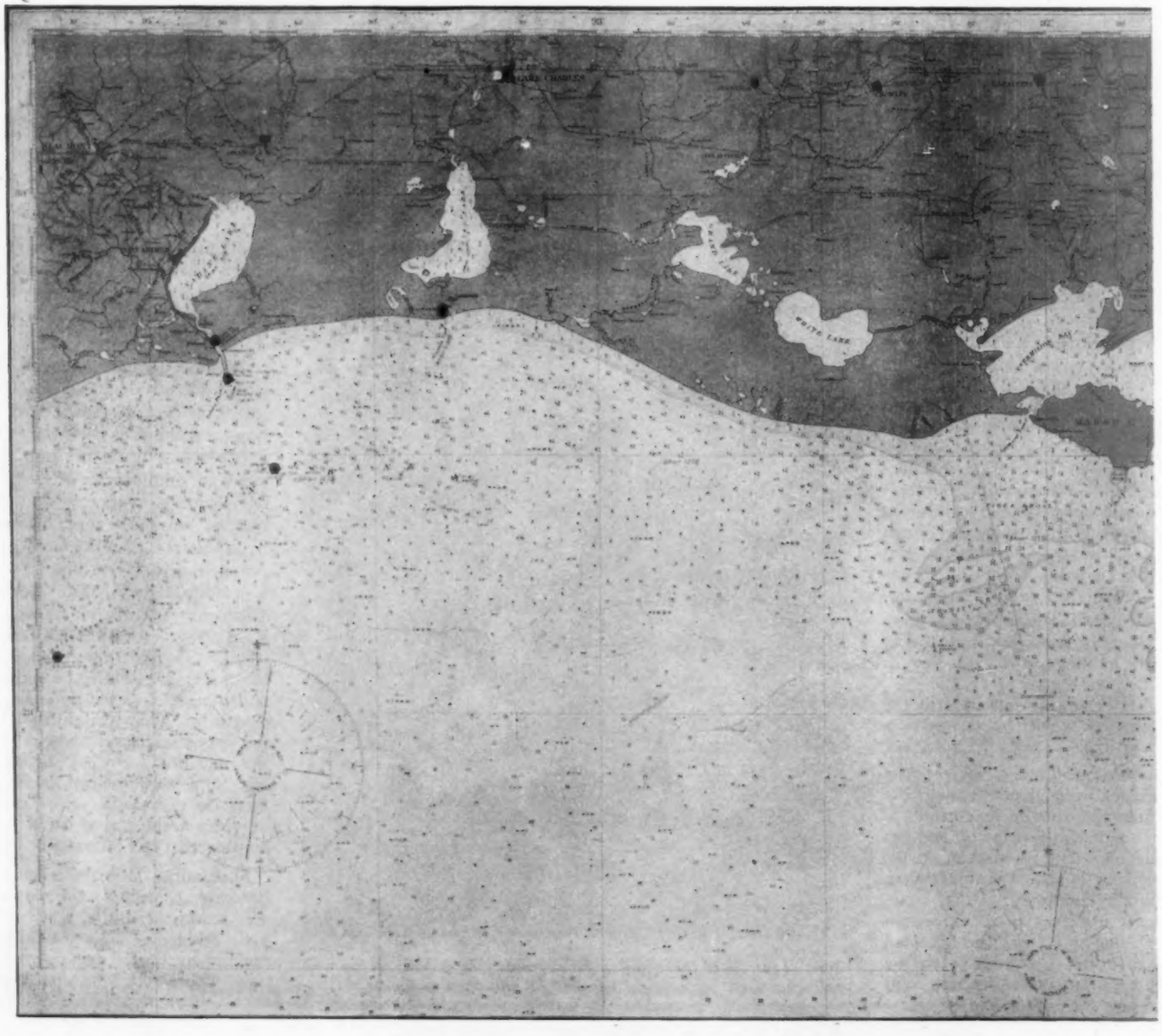
The two accompanying photographs of water operations offer fine examples of the two types of drilling that will be done in the maritime zone. The first, commonly used in near-shore drilling, involves the construction of a strong bridge capable of affording heavy transportation. In this type of water drilling all material is hauled by truck to the location, and work proceeds in a fashion not greatly unlike that on land. These particular rigs were used on operations of the Louisiana Land & Exploration Company used in work carried on in Calcasieu Lake. The second type of operation is used on locations at remote points from land. Barges are used in transporting equipment and fuel to the location, and members of the crew travel to and from land by launch. In both cases concrete pilings afford foundations, making a major job before the rig building begins.

The initial work on development of this vast water lease is scheduled to start within the near future, and within the coming two years the procedure of plans will see wildcatting miles from land in the Gulf a common occurrence.

Louisiana Waterways

The problems offered oil operators in South Louisiana by its many lakes,

Map Showing the Louisiana Gulf Maritime Zone



bayous, rivers and bays in turn lend valuable service. There are approximately 10,000 miles of waterways in the southern portion of the state which furnish transportation. Natural waterways provide the bulk of this, but canals cut through this territory have greatly enhanced transportation facilities. The canal travel in itself has not offered as many miles of water travel as the new natural transportation facilities made available through use of the canals. An example of how the combination of natural and artificial waterways works is seen in the shipping of Lockport field production by Vacuum oil Company from Lake Charles to the gulf by Calcasieu River, Calcasieu Lake and the Intercoastal Canal, and thence to refining points.

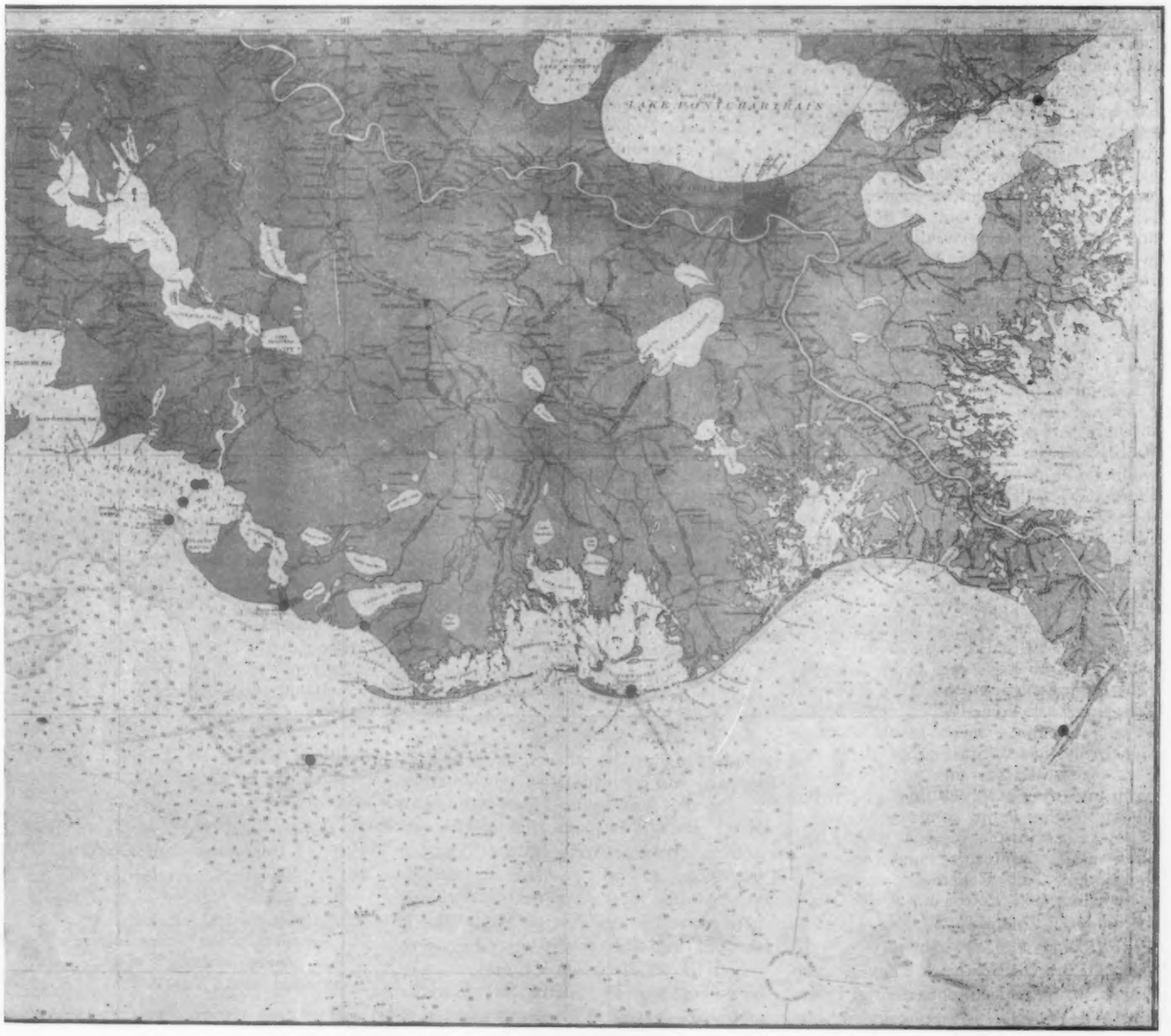
While the larger waterways are providing means of moving present and future production the small bayous and canals are giving transportation facilities to the exploration companies. In many cases a 10-mile boat trip eliminates an automobile trip of 200 to 300 miles. Furthermore the the waterways of South Louisiana are offering conveniences to the most modern modes of travel, serving as ideal landing fields for the hydroplane, the use of which has become common in this area. Officials of several major companies now operating in the extreme southern part of the state are using the hydroplane for traveling between the field job and New Orleans and other points.

Frederick B. Henderson, vice president and director of the Associated Oil Company, died at his home in Oakland, January 12,(after an illness of short duration. Mr. Henderson was one of the best known oil men in California, having continuously been in the industry since 1894. He had been with Associated Oil Company for more than 26 years. During the World War, he served on the Pacific Coast Petroleum Committee. Mr. Henderson had been at the head of the sales department for several years.

George B. Keeler of Bartlesville, Oklahoma, died at his home January 20. He will be remembered by many as being responsible for the drilling of the first well for oil in Oklahoma. He induced the Cudahay Interests to drill the test in what is now a park in Bartlesville.

Charles H. Oles, general auditor of the Prairie Oil & Gas Company, died in Amarillo, Texas, January 20, His funeral was held at Independence, Kansas, January 23, when offices of the company in Independence and Tulsa were closed.

Blanket Lease Made for Prospecting



South Louisiana Has Real Future In Newly Found Domes

Geophysical discoveries start development work on large scale during 1928 and prospects are that this activity will increase in near future

By JACK LOGAN
Staff Representative

AS compared with this time two years ago, the Louisiana Gulf Coast now has twice as many producing fields and twice as much production; the present output being around 24,000 barrels daily from 10 fields, and the present record of activity shows approximately 85 operations, whereas the normal activity two years ago comprised about 65 operations for the entire region.

The present status of drilling operations represents about the same condition that has existed throughout the past year or so, but an increase in activity during the coming year may be safely predicted, in view of the fact that numerous salt domes were discovered during 1928 and still remain untested by a single well.

One important consideration in this connection is that The Texas Company has taken over nine domes of the Louisiana Land & Exploration Company, obligating itself to drill at least four tests on each of them, the agreement calling for prompt carrying out of this obligation. Seven of these domes, all located in Terrebonne Parish, are still obsolutely virgin territory, having been outlined by seismograph, but not having been tested by the drill.

The other two domes acquired by The Texas Company from the Louisiana Land & Exploration Company are the South Calcasieu Lake dome, located in the southern part of Calcasieu Lake, Cameron Parish, and the Vermilion Bay or Cypremont Point dome in Iberia Parish. In addition, The Texas Company, through the same deal, took over the leases of the Louisiana Land & Exploration Company on the east end of the East Hackberry dome, Cameron Parish.

The Texas Company has already started two tests, in accordance with the agreement with the Louisiana Land & Exploration Company; one being on East Hackberry dome, and the other on South Calcasieu Lake dome, which, incidentally, is only about 14 miles south of East Hackberry dome. Starting of these two tests marks the entrance of The Texas Company in South Louisiana activity, adding another major company to the list of operators in the region. Among the other major companies now operating there are: Gulf Refining Company of Louisiana, Shell Petroleum Corporation, Vacuum Oil Company, Magnolia Petroleum Company, E. F. Simms Interests, and the Pure Oil Company. The Calcasieu Oil Company, with headquarters in Houston, and the Union Sulphur Company, which has both oil and sulphur properties, are also extensively interested in South Louisiana oil development.

The past few years have brought about a radical revolution in development in the Gulf Coast country of Texas and Louisiana; the use of the seismograph and other geophysical instruments having been tried out in locating salt domes, and having proved highly successful. At first the industry was slow to place confidence in the geophysical methods, but various geophysical prospects were drilled upon, and the findings were verified by the drill; and as time passed additional domes found by geophysical work were proved up; with the result that the reliability of the seismograph or other geophysical instrument has come to be generally acknowledged, and there has been widespread and intensive work with the new instruments throughout the Coastal country.

The search for salt domes in South Louisiana extended into the swamps, river bottoms, bays and lakes; into almost inaccessible places, and places where probably no domes would ever have been found without the use of the new methods; beyond the most easterly producing field of Louisiana, and beyond the Mississippi River.

The result of this exploration has been exceptionally gratifying. The Louisiana Gulf Coast has proved even more fertile than the Texas coast, from the standpoint of geophysics.

A recent check of the geophysically discovered domes in Southern Louisiana showed a total of 32. Of this number, 19 are still untested; but since The Texas Company has made its agreement with the Louisiana Land & Exploration Company, seven more are due to be drilled within a short time.

Briefly considering the 13 geophysical discoveries which have been tested with the drill, a survey brought up to date shows that three of them, Starks, Sorrento, and East Hackberry, have been developed into oil fields; two others, White Castle and Loreauville (Fausse Point or Eagle Point), have yielded a little oil, although comparatively little drilling has been done, and will probably be later developed into important fields. Six have been proved as domes through drilling to the salt, but still remain unproductive of oil, as Bayou Blue, South Calcasieu Lake, Vermilion Bay, Thibodaux, Napoleonville, and Black Bayou. Two, Egan and Bayou des Glaise, remain unproved as domes although tested.

Drilling Activity in Louisiana Gulf Coast

Geophysically Found Domes	
Dome, Parish	Operations
Sorrento—Ascension	1
Starks—Calcasieu	3
Black Bayou—Cameron	2
E. Hackberry—Cameron	4
S. Calcasieu Lake—Cameron	1
Loreauville (Fausse Pt.)—Iberia	2
Vermilion Bay—Iberia	1
Bayou Blue—Iberville	2
Bayou des Glaise—Iberville	1
White Castle—Iberville	1
Thibodaux—La Fourche	1
Total	19
Other Domes and Fields	
Jennings (Evangeline)—Acadia	11
Lockport—Calcasieu	6
Sulphur—Calcasieu	8
Edgerly—Calcasieu	4
Vinton—Calcasieu	6
Hackberry (old)—Cameron	3
Sweet Lake—Cameron	2
Bayou Bouillon—St. Martin	6
Total	46
Wildcats	
Miscellaneous	15
Grand total	80

Comparison of South Louisiana Production Now With Output Two Years Ago

	Daily av. week ending Dec. 29, 1928	Daily av. week ending Dec. 25, 1926
Bayou Bouillon	500	....
E. Hackberry	5,800	....
Edgerly	1,000	550
Evangeline	950	1,450
Lockport	4,600	3,300
Sorrento	1,200	....
Sulphur Dome	3,500	....
Sweet Lake	1,050	....
Vinton	4,400	5,800
Others	850	450
Total	23,850	11,550

Geophysical Discoveries in the Louisiana Gulf Coast

Proved domes and productive commercially	3
Proved domes and yielded a little oil	2
Proved domes but unproductive	6
Not proved, although tested	2
Untested	19
Total	32

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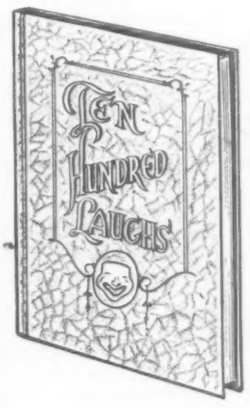

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Grace Has Charge of Louisiana's Public Lands

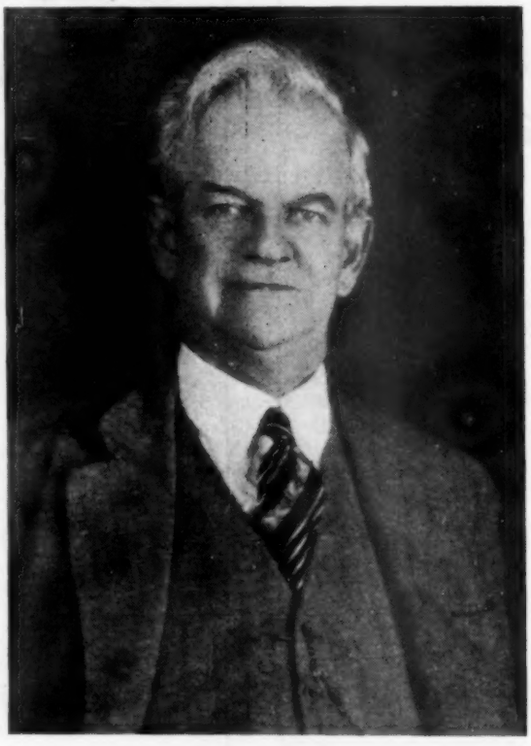
WHEN this gentleman walks into any town in his state he is at home. He knows more people by nick-name than the average man of wide acquaintance knows by sight. In Fred J. Grace, Louisiana has a real institution.

The Honorable Fred J. Grace, who rather chooses to be known as plain Fred, has done more toward developing Louisiana's oil reserves than any other one individual. He is now serving his twenty-first year as Register of the Louisiana State Land Office, and has seen the income of the land department raised from $8000 in 1908, to $1,062,835.22 in 1928. The bulk of this revenue is from oil and gas royalties, bonuses and rentals from oil and gas leases. He has leased more than 1,500,000 acres of state land for oil and gas development, and now has roundly 689,000 acres of state land actively leased.

Louisiana won great distinction in 1927 through its successful work in retaining a federal land office in Louisiana after Washington had seen completion of the work in the state and ordered the office closed; the customary procedure after active disposition of federal lands in a state is made. It was Fred J. Grace, with his secretary of the Louisiana Land Office, Carl Campbell, who succeeded in accomplishing this piece of work for the state. They went to Washington in April, 1927, and obtained permission to have the records transferred back to Louisiana after these records had been packed and the office closed following orders from federal authorities. As a result the state land office now supervises the work of the federal land office in Louisiana.

Mr. Grace is declared to be the best known state land commissioner in Washington. His work takes him there three times annually, and he has always worked in close contact with federal officials.

In 1910 he was made custodian of all tax records on land sold to the state on non-payment of taxes. From this a new department within the land office was created, and is handled by W. D. Cotton. Mr. Grace was formerly commissioner of mines and minerals and commissioner of forests for Louisiana. He was the first man to make an inventory of forests on state lands, and it was through his diligent efforts that the dormant Louisiana swamp lands were put before the public, resulting in their development for resources supplying several industries. It was his work that led to the leasing of state lands under rivers, lakes and bayous to concerns exploiting the regions for oil and gas. Outstanding in this work no doubt, is the recent leasing by him of the great maritime zone in its entirety, aggregating at least 500,000 acres of water territory which is due to be exploited within the near future.



Fred J. Grace has done more than any other one man to develop the waste lands of Louisiana

Included in the outstanding work for his state is the famous Sabine Island case, involving approximately 8200 acres. He was instrumental in winning this case for Louisiana as he was in the well known Caddo Lake case, which obtained for the state the entire royalty from this property.

Fred J. Grace was born in Plaquemine, Iberville Parish, Louisiana, May 9, 1870. At 11 years of age he was one of 11 orphaned children. He gained a lot of experience selling newspapers and clerking in a general merchandising store, and managed to partially educate himself by attending St. Charles College at Grand Coteau for 13 months. Then seven years on a plantation at the business end of a hoe, and into the insurance business for two years. At an early age he joined Woodward, Wight & Company of New Orleans, and spent five years selling mill supplies on the road. He found selling hardware, like selling most anything else, had its ups and downs. Here's one interesting experience his friends like to tell on him:

He had called on a certain mill owner in a Mississippi River bottom town for two years without an order for a dime's worth of business. Always he boasted that his company handled absolutely everything a man could want. One day the mill owner promised that sometime he'd try to figure out an order for him. He was pleased to the point of looking forward to the order and began rolling over in his mind what it might be. It came one Sunday morning about three o'clock in the form of a long distance call to his New Orleans home. The mill owner had lost an old friend in his home town, and there wasn't a preacher available for miles around to deliver the last rites. "If your company's got everything," the fellow said, "bring us a preacher at once!" Grace hitched up his horse and started out after a preacher. Sunday morning was a bad time to find one at leisure, but he persuaded one to cut his sermon short, and drove him to the mill owner's town in time for the funeral. This service broke the ice, and he started getting regular orders—not for more preachers, but for mill equipment.

Mr. Grace followed his selling experience with Woodward, Wight & Company with connection with the Reliance Machinery Company, and later with the Wilmot Machinery Company of New Orleans.

He was elected Register of the State land office of Louisiana in January, 1908, and has never been defeated for that office in six elections, although on several occasions he has had two or three opposing candidates.

The land office of Fred J. Grace at the State House in Baton Rouge is open at night and Sundays for oil men wanting information. Never, since his first term in office, has his door been closed at night while the state legislature is in session. His office joins the legislative chamber in the State House, and he says some member might have occasion to use his phone or some wife might want to call her husband. Another type of hospitality that he likes to offer is the famous Creole dinner supervised by Mrs. Grace in their home, a dinner well known by Louisiana oil men.

Two daughters of Fred J. Grace, Lucile May and Myrthe E. Grace, are familiar figures in the Louisiana Land Department, the former being chief clerk in the Survey General's Office, and the latter secretary to her father in the land office. A third daughter, Aline, is being graduated from Louisiana State University this spring. His son, Fred J. Grace, Jr., is manager of the Baton Rouge district for Jahncke Service Company of New Orleans.

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Most of Recently Found Domes Were "Shot" After Gas Seeps and Paraffine Dirt Showed the Way

(Continued from page 78)

foot, creating wild confusion among the onlookers. Just as the mad rush for safety started, the gas found an outlet through soft formations circling the uplift, and the layer dropped again, making the crowd more terror-stricken than the first disturbance.

"Fire Islands," known to the early natives of South Louisiana, as in many other parts of the world, got their name from burning mounds uplifted by gas which later broke through, and, when ignited, sometimes burned for months. In some sections of lower Louisiana, chiefly in the Mississippi delta region, gas rises near the surface, strikes hard top formations and, due to the resistance offered, causes a small oval, or circular mound. Natives called these gas boils. In many cases the gas later finds its escape through a soft formation, and the surface is released, breaking and sinking again to natural level, but leaving a spot of evident disturbance. Due to the weight of the earth's crust in some of these points, the mounds stay as they were formed, and, unless some other point of little resistance is found for its escape, the pressure simply continues building up. At the edge of a lake south of Houma, Louisiana, a violent eruption took place many years ago, the result of a large number of gas mounds breaking open because of the high pressure created over a long period.

Oil seeps are known to exist out in the maritime zone, and are shown on government charts. Such seeps are familiar to experienced boatmen, who steer for them during storms, following the theory of "oil soothing troubled waters."

Gas escaping through water and coming in contact with the bottom of a passing boat sounds much like a school of small fish flapping against the boat. Such noises have been the source of discovering some escapes, and also the reason for many false investigations while hunting for gas seeps.

There are many other examples of important oil or gas reserves being located from seeping gas. Houma gas field, where wells flowed 90,000,000 cubic feet daily with rock pressure of more than 1000 pounds from 2300 feet, resulted from seepage discovered by Ladanois, an old French geologist, and later drilled by I. N. Knapp. A gas seep in the marsh lands near Sorrento, Louisiana, east of the Mississippi River, gave rise to geophysical exploration, a dome was found and the McElroy oil field drilled to production in less than a year. At Section 28 Dome, St. Martin Parish, the natives showed oil men a gas seep, and the first well drilled found the salt. A seepage in Lake Fausse Point led to seismograph exploration, a dome was discovered and production followed within six months. Bayou Boullion

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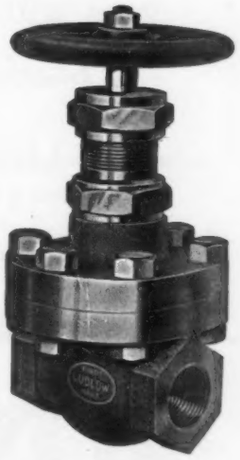

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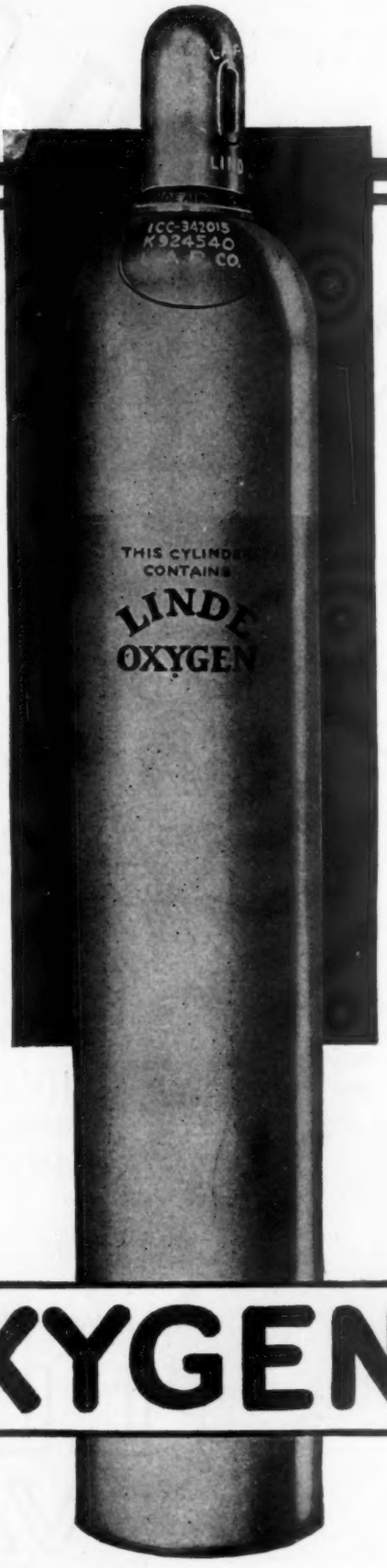

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(boiling bayou) showed seeping gas for many years before attention of oil operators was attracted. Geophysical work confirmed the dome, and Rycade Oil Corporation has recently developed what bids fair to be major production there. Gas seepage manifested excitement among the natives around Chacahoula swamp, five miles west of Thibodaux since the memory of the earliest inhabitants there. Gulf Production Company located a salt dome, using seismograph, and salt was encountered shortly after. The eighth well is now being drilled in the program of outlining the prospective pay area.

In the mountainous country of Southwest Texas there are large numbers of small egg-shaped mounds, rising from one to three feet above the surrounding acreage. The early inhabitants of the district called them Indian Mounds, curious ranchers dug as deep as 15 feet into the mounds in search for Indian relics; and while the mounds were as barren at this depth as at the surface, they ordinarily retained the same peculiar soil, generally not resembling in texture the surrounding soil. These mounds have not been exploited for oil or gas, although they present similar texture conditions as the paraffine beds.

In a number of Southern Louisiana towns families get enough gas production to supply their domestic uses by drilling 200 feet in their yards. In the early days it was common opinion that the gas was created by alluvial deposits. Since drilling has proved the existence of oil and bigger gas pay at lower levels at these points showing surface gas escapes, the deep seated source of these seeps are generally realized.

Operations at Ventura Holding Steady Pace

Ventura, Calif.—Several new locations in the Ventura field have brought the number of drilling wells up to the figure of three months ago and eliminates the possibility of a sharp decline in operations during the greater part of the year. Curtailment has played an important part in holding down production during the past year, offsetting a flush production of more than 25,000 barrels. Nearly all new wells have been cut back to 75 or 80 per cent. of their capacity after a 30-day test. New locations almost exactly kept pace with the completions throughout the year, the three chief operating companies having been anxious to keep a certain number of crews busy.

Associated Oil Company completed Lloyd 25 with an initial production of 600 barrels from 7505 feet. The well was much smaller than the average completed on the Lloyd lease and showed only a small gain from the initial production. The oil showed a cut of eight per cent. but the gravity was higher than usual, testing 31 degrees. Gas production was about six million cubic feet, or a much higher amount than the proper gas-oil ratio justifies.

The decline in some of the older wells is regarded as an indication that many producers will need deepening as production falls below a profitable figure.

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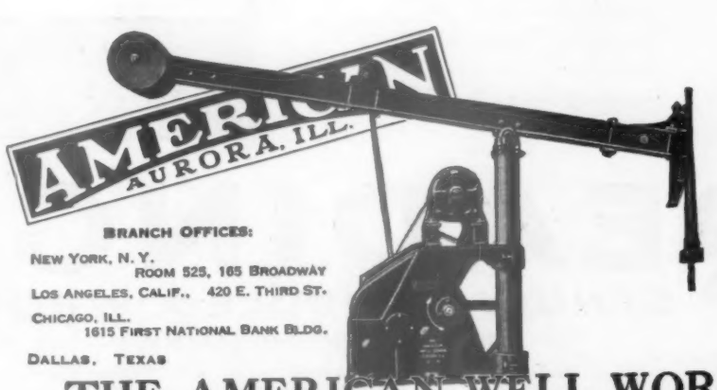

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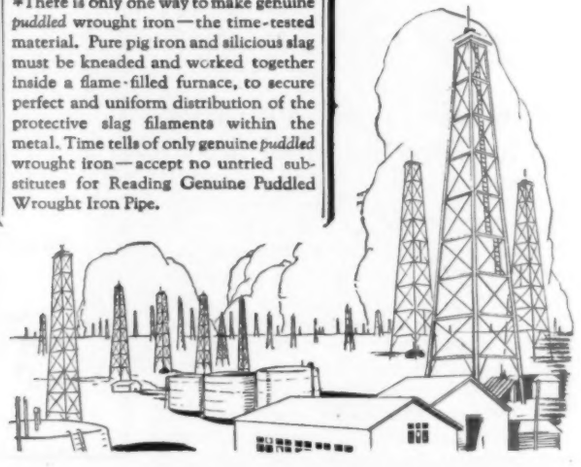

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Say you saw it in The OIL WEEKLY

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	7	3	5	..	..	2	1	1	1,096	...
California	19	21	18	21	..	..	1	..	44,850	48,285
Illinois	6	4	3	3	1	..	2	1	35	262
Indiana	..	4	..	2	..	1	..	1	...	51
Kansas	14	8	7	4	3	..	4	4	1,340	285
Knetucky	10	21	7	8	..	2	3	11	280	235
Louisiana	11	10	2	4	5	..	4	6	55	2,516
Michigan	16	8	5	4	..	1	11	3	700	2,250
New York	..	18	..	18	..	..	..	..	...	55
Ohio	51	31	24	12	19	12	8	7	485	155
Oklahoma	60	45	34	19	7	3	19	23	5,986	16,660
Pennsylvania	22	40	21	40	..	..	1	..	101	352
Texas	169	147	83	87	15	4	71	56	73,208	123,049
West Virginia	30	8	7	3	16	4	7	1	42	62
Total	415	368	216	225	66	29	133	114	128,178	194,217
Increase this week	47	..	..	..	37	..	19	..	...	...
Decrease this week	..	..	9	..	..	..	..	..	66,039	...

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Empire, Hutchinson "B" 5, nw ne, 27-27-5e	350	2764
Willits 6, se sw, 22-27-5e	250	2772
Willits 7, ne nw, 27-27-5e	200	2760
Garden et al, Sluss "B" 3, c ne nw, 6-27-6e	240	2753
Swartz etal, Randall 1, nw ne nw, 22-24-4e	*	2653
COWLEY COUNTY—		
Kentucky Gas Co., Fulls 1, nw ne nw, 18-33-7e	¶1½	977
Melick 2, ne sw, 13-34-6e	¶4	1150
Lewis Prod. Co., Conrad 1, ne nw sw, 30-31-6e	*	3025
ELK COUNTY—		
Nat'l. Union Oil Co., Eyman 8, se ne, 9-31-10e	100	2019
Sonner Gas Co., Townlot 1, nw se sw, 10-31-10e	75	2006
GREENWOOD COUNTY—		
Amerada, Luthi 5, se nw sw, 29-22-13e	125	1711
Sheedy et al, Sharp 1, ne nw ne, 5-24-13e	¶1	521
York State Oil Co., Rice 1, sw se ne, 21-23-11e	*	1946
WOODSON COUNTY—		
Fields & Cross, Eades 2, ne nw se, 24-25-13e	*	1568

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
BECKHAM COUNTY—		
Magnolia, Davis 2, sw nw se, 21-9-23w	¶42	2739
CARTER COUNTY—		
Magnolia, Ratliff 1, ne nw nw, 29-1s-3w	50	3207
CREEK COUNTY—		
Kingwood Oil Co. et al, Deere 1, se sw, 6-19-7e	200	3179
Dixie, Tahkaney 4, ne sw se, 7-19-9e	¶¼	2100
Sand Springs Home Oil Co., Atkins 28, cwl nw nw, 4-18-7e	25	2658
Roach et al, Beavers 3, se nw nw, 35-18-9e	15	1954
Central Commercial Oil Co., Hay 1, ne nw sw, 10-17-10e	¶3½	2013
Fox & Irlan, Goody 2, c nw ne, 25-17-10e	20	1947
George Collins, Townlot 1a, (TWIN) sw ne ne, 3-17-11e	10	1825
Peters Pet. Co., Arsayalee 4, sw ne ne, 21-16-8e	150	3153
Twin State, Barnett 1, nw ne nw, 15-15-8e	20	3817
C. G. Tibbens, Carmen 3, nw se nw, 29-15-9e	¶3	2660
Shaffer, Long 3, nw ne ne, 6-14-9e	90	3708
Morgan & Flynn, Ralston 1, ne nw sw, 1-16-9e	*	3310
O'Rourke Bros. et al, Sewell 1, se sw nw, 4-16-9e	*	3542
Magnolia & Billingslea, Wattie 2, ne cor, 6-15-7e	*	3710
COTTON COUNTY—		
Shasta Oil Co., Chambers 3, ne sw nw, 2-2s-10w	34	2167
Razor & Atkins, Chambers 1, nw se sw, 35-1s-10w	*	2202
GRADY COUNTY—		
Okla. Gas Util., School 5, nw sw nw, 36-5n-8w	¶37	2400
KAY COUNTY—		
Carter & Ona Oil Co., Lambing 1, c ne ne, 19-29-1e	300	3355
Tidal Oil Co., Cole 4, c nw se, 18-29-1e	*	3575
Carter & Ona Oil Co., Mefford 1, c se nw, 18-20-1e	*	3774
Mummert Drlg. Co. et al, Weedin 1, ne sw sw sw, 34-27-3e	*	1895
D. Early et al, Gaylor 2a, cnl sw, 19-27-1w	*	3550
KIOWA COUNTY—		
Alexander et al, Kinhead 1, nw sw nw, 2-6e-16w	*	643
LATIMER COUNTY—		
Leflore Gas & Elec. Co., Cutler 1, nw ne se, 17-6n-21e	*	2673
LINCOLN COUNTY—		
Texas Pac. Coal & Oil Co., Fairs 1, ne se nw, 35-17-6e	*	3880
LOGAN COUNTY—		
Shell, Freelove 2, nw sw sw, 17-19-4w	358	6127
MUSKOGEE COUNTY—		
R. & R. Drlg. Co., Ragan 1, ne, 19-13-16e	30	2160
OKFUSKEE COUNTY—		
C. L. McMahon, Hall 2, sw se nw, 29-12-10e	75	3152
Burke-Greis, Unallotted 2, sw ne sw, 36-11-9e	¶55	3630
Champlin, Washington 1, sw nw se, 15-11-1e	100	3504
Josey Oil Co., McCoy 12, ne nw sw, 33-12-11e	*	3057
OKMULGEE COUNTY—		
J. K. Gardner et al, Fixico 2, csl nw se, 9-14-13e	20	1174
Aiken Oil Co. et al, Fox 4, nw ne se nw, 22-14-14e	500	2292
OSAGE COUNTY—		
The Texas Co. 1, sw nw se, 30-25-8e	220	2954
A. G. Oliphant 1, nw ne, 6-23-9e	180	2168
L. G. Stanley 4, nw sw se, 36-22-8e	75	460
Lewis Prod. Co. et al 2, nw sw, 14-26-6e	125	2993
Lewis Prod. Co. 1, sw cor, 14-26-6e	117	2991
PAWNEE COUNTY—		
Kennedy & Horner, Kender 2, c ne ne, 13-20-9e	*	2806
PAYNE COUNTY—		
Pure, Axtell 3, nw sw, 8-18-4e	115	4297
POTTAWATOMIE COUNTY—		
Darby Pet. Co., Ketchum 1, ne se nw, 18-8-5e	354	4257
Amerada, Gossland 1, ne sw, 8-8-5e	175	4310
Pure, Dodson 2, nw se se, 26-7-4e	125	4177
Sinclair, Neeley 5, nw sw sw, 25-7-4e	205	4226
Blackwell O. & G., Cherry 1, nw ne, 25-7-4e	595	4223
Sinclair, Blandin 11, sw se sw, 24-7-4e	40	4309
Blackwell O. & G., Lewis 1, sw ne, 24-7-4e	30	4490
Gypsy, LeClair 4, sw se, 23-7-4e	620	4257
McMann & White Eagle, Roberts 1, ne sw se, 9-8-5e	*	4667
SEMINOLE COUNTY—		
Pure, Brinson 2, nw sw, 24-7-6e	347	4362
The Texas Co., Lucy 6, se sw se, 18-5-8e	660	2575
McCulloch et al, Rentie 1, ne nw nw, 7-9-6e	*	4331
STEPHENS COUNTY—		
Mudge Oil Co., Cobb "A" 8, se nw ne, 1-2s-5w	6	702
Saterwood & Hart, Farrout 2, ne nw, 9-1s-8w	*	2506
Roy Carter et al, Simpson 1, ne se se se, 34-1s-8w	*	1940
Roy Carter et al, Simpson 6, nw sw sw se, 34-1s-8w	*	1736
TULSA COUNTY—		
Munn Bros., Wray 1, cwl sw sw, 35-19-13e	*	3052
WAGONER COUNTY—		
Elk Drilling Co., Childers 3, sw ne se, 29-18-17e	¶¼	442

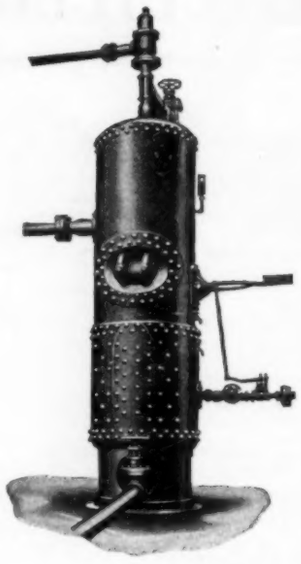
EASTERN STATES

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
ATHENS COUNTY—		
Hulse & Kundtz, Shafer 2	*	1017
McBride & Co., Wright 1	¶¼	1464
Athens State O. & G. Co., Higgins 2	*	1255
Ohio Fuel Gas Co., Ohio Colliers Co. 1	*	390
Linscott 1	¶½	137
Elliott 2	¶1½	138
Black Diamond Coal 10	¶¼	9
Fleming 2	¶1½	1455
HOCKING COUNTY—		
Preston Oil Co., Marks 2-1262	45	2938
Griffin Producing Co., Geiger 1	5	....
Bell & Scholl, Harden 2	30	2884
Craig, Adlar & Co., Hengst 3	15	2772
LICKING COUNTY—		
Whitehill Gas Co., Ashcraft 3	¶¼	70 2930
H. C. Farmer, Hoover 3	3	691
Preston Oil Co., Ashcraft 2	2	734
Emerald Pet. Co., Weiss 1	*	646
MUSKINGUM COUNTY—		
Heisey Gas Co., Burrier 2	¶¼	85 3160
Ohio Fuel Gas Co., Shaw 3	¶6	3450
PERRY COUNTY—		
P. C. Miller & Co., Brown 2	35	3580
Miller, Jewell & Co., Henning 1	25	....
Dun Mar Oil Co., Higgins 1	¶¼	....
ASHLAND COUNTY—		
Ohio Fuel Gas Co., Brown 1	¶¼	....
Milligan 1	¶1¼	....
MEIGS COUNTY—		
Frick & Barnby, Genheimer 4	6	18
COSHOCTON COUNTY—		
Leonard Oil & Gas Co., Norris 3	¶¼-75	3225
STAR— COUNTY—		
Cashdollar & Co., Nichter 1	¶2	....
SUMMIT COUNTY—		
F. E. Brendall & Co., Raber 1	¶3½	....
MEDINA COUNTY—		
Ohio Fuel Gas Co., Quayle 1	*	....
KNOX COUNTY—		
Harry Perkins, Griffith 1	*	2714

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
SENECA COUNTY—		
Muncy Valley Oil & Gas Co., Shrodes 1	1	1442
W. E. Richard & Co., Sherger 2	40	1512
P. F. O'Brien & Co., Saul 2	¶1	1491
HANCOCK COUNTY—		
Robert Mitchell, Trustee, Beard 2	20	132



Separation of oil and gas at times requires apparatus that will operate at a greater pressure than is ordinarily used, for the purpose of re-pressuring exhausted sands, for flowing other wells directly from the separators, or for some other purpose.

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HOME OF WINTER RACING

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
Forest Oil Co., Porter 17	3	....
Porter 18, 19, 20, 21	Pressure	....
Forest Oil Corp., Fee 1	2	....
Fee 2	2	....
Fee 3	2	....
Forest Pet. Corp., Fee 1	2	....
Fee 2	2	....
Fee 3	2	....
Fee 17	(Pressure Wells)	....
North Branch Oil Co., North Branch 9	Pressure	....
H. McCollom, Bingham 291, tr 91	2	....
Devore & Porter, Russell 1	3	....
J. S. Brown, Bell 1	2	....
Dunlavy Bros. & Co., Curtis 2	2	....
N. V. V. Franchot, Campbell 3	7	....
D. J. Moody, Moody 23	2	....
B. Devlin, Devlin 2	4	....
J. L. Yerden, Bingham 5	3	....
Gridiron Oil Co., Duke 27	3	....
BUTLER COUNTY—		
Breame Oil Co., Trees 2	450	....
GREENE COUNTY—		
Renner O. & G. Trust, Renner 1	*	....
VENANGO COUNTY—		
Irwin & Thorn, Hovis 17	2	....
Franklin Trust Co., Witherup 17	2	....
Oil City Nat. Bank, Splane 38	2	....
Foster 17	2	....

WEST VIRGINIA

RITCHIE COUNTY—		
Hope Nat. Gas Co., Duty 1	¶1	....
Dotey 1	¶1	....
South Penn Oil Co., Lambert 10	2	....
Franklin Deem & Co., Ayres 1	3	....
Imperial Oil Co., Jones 1	5	....
Ira Cox, Ira Cox 5	*	....
A. R. Kelley & Co., Reymer 1	*	....
H. H. Chogville & Co., McCullough 5	*	....
Southern Oil Co., Dunlavey 1	¶½	....
J. F. Deem & Co., Ayres 2	3	....
Mellon Oil Co., Lewis 4	¶½	....
Reno Oil Co., Mullenax 10	*	....
GILMER COUNTY—		
Gainer Farm Oil Co., Gainer 4	*	....
Park Bowser, Mitchell 3	¶3	....
C. W. Bennett & Co., Miller 1	*	....
Valley O. & G. Co., Miller 1	*	....
A. L. Britton, Jones 1	¶1½	....
McCall Drilling Co., Riddle Bros. 5	5	....
CALHOUN COUNTY—		
United Carbon Co., Davis 2	¶1½	....
Calhoun O. & G. Co., Anderson 1	4	....
Dunbar O. & G. Co., Flesher 1	¶1¼	....
LINCOLN COUNTY—		
Earl Cameron, Stone 3	¶1	....
United Fuel Gas Co., Horse Creek Tr. 21	¶1	....
Empire State O. & G. Co., Courts 9	¶1	....
HARRISON COUNTY—		
Reserve Gas Co., Bartlett 1	¶2	....
J. M. Raad, Shahan 7	¶2½	....
ROANE COUNTY—		
Federal Oil Co., Pell-Newman 42	20	....
DODDRIDGE COUNTY—		
Pittsburg & W. Va. Gas Co., Snyder 1	¶1	....
CABELL COUNTY—		
Harshbarger O. & G. Co., Howes 2	¶1¼	....
LOGAN COUNTY—		
Trojan Oil Co., McKinney 1	¶2	....

KENTUCKY

OHIO COUNTY—		
T. M. Sirman, Farmer 7	50	....
Creek Drilling Co., Westerfield 4	30	625
D. T. Boling, Westerfield 2	15	600
J. C. Ellis & Co., Mosley 3	*	....
DAVIESS COUNTY—		
Creek Drilling Co., Leet 3	90	....
Tompkins 10	*	....
Cox Dev. Co., Taylor 3	35	....
Taylor 2	35	....
Garrison & Evans, Trodgen 3	25	....
ALLEN COUNTY—		
George L. Porter, Nitcher 1	*	40.

SOUTHWESTERN OHIO

WASHINGTON COUNTY—		
Dean Fork O. & G. Co., King 9	¶¼	113
Frank Coffman, Coffman 6	1	89
Wm. Lee, Sr., Lee 10	10	....
Pure Oil Co., Hayes 5	*	1406
Perdew & Co., Perdew 4	¶¼	1437
Herman Schramm & Co., Ward 9	*	....
Mendenhall Bros., Mendenhall Hrs. 1	2	....
Hill Top O. & G. Co., Cochran Hrs 5	¶½	....
NOBLE COUNTY—		
Mercer Oil Co., Crum 7	1	254
Heiszler O. & G. Co., Heiszler 3	3	790
Charles Robinson, Masters 7	4	900
Watson & Co., Craig 1	3	954
MORGAN COUNTY—		
Orondorff & Co., Thompson 1	¶¼	1450
Bauman & Co., Hileman 30	¶1½	705
Sutton Bros., Williams 12	¶½	1456
Ohio Fuel Gas Co., James 1	¶¼	1577
MONROE COUNTY—		
Carlos Luberg & Co., Zwick 1	2	1513
JEFFERSON COUNTY—		
Boyer Drilling Co., Wilt 4	2	....

ILLINOIS

CRAWFORD COUNTY—		
Edward Kerlin, Goff 1	¶¼	90
Dark Bend Oil Co., Price 3	5	1542
R. W. Moore & Co., Brownfield 1	*	1530
CLARK COUNTY—		
Snaveley, Holmes & Co., Prevo 1	*	2375
WABASH COUNTY—		
Mayhugh & Co., Kogan Heirs 15	15	1570
LAWRENCE COUNTY—		
The Ohio Oil Co., Nuttall 8	15	1660

MICHIGAN

MUSKEGON COUNTY—		
Concord O. & G. Co., Giles 1	500	....
Muskegon Oil Corp., Daniloff 1	80	1910
Maire, Caswell & Co., Haight 2	50	1641
Dixie Oil Co., Dierks D-2	20	2058
Muskegon-Davis-Ottawa Co.'s Torrent 1	50	2014
Commonwealth Oil Co., Trierweiler 1	*	....
Paragon Oil Co., Geboo 1	*	2092
Maire, Caswell & Co., Pappas 1	*	2090
Muskegon-Davis Oil Co.'s Peterson 1	*	2072
Laketon Oil Co., Phelps 1	*	2275
ST. CLAIR COUNTY—		
St. Clair O. & G. Co., West St. Clair 1	*	....
West St. Clair 1	*	....
S. W. of St. Clair 1	*	....
Michigan Pet. Co., S. W. of Blaine 1	*	....
MANISTEE COUNTY—		
Mainstee Salt Co., Fee 1	*	5280
HURON COUNTY—		
Pure Oil Co., Fairhaven 1	*	2800

CALIFORNIA

LONG BEACH—		
Dabney-Johnston Oil Corp., 17	1300	6275
George F. Getty, 26	1300	6815
Signal Syndicate, 8	150	7203
Sovereign Oil Co., 2	3000	7810
Superior Oil Co., Crew 5	100	6685
The Petroleum Co., Ifland 1	1500	6790
SANTA FE SPRINGS—		
General Pet. Corp., Santa Fe 160A	2500	5100
Santa Fe 161A	2500	5765
Santa Fe 190C	1100	5728
Santa Fe 225	10,200	5805
Santa Fe 227	5100	5680
Santa Fe 186E	1000	5185
Graham and Loftus, Santa Fe 2	2900	5285
Shell Co., G. H. N. 19	2000	5815
Standard Oil Co., Walker 12	3600	5740
Wilshire Oil Co., Cecelia 1-B	2800	5870
SEAL BEACH—		
Marland Oil Co., Bixby 15	3200	5440
VENTURA—		
Associated Oil Co., Lloyd 25	600	7505

NORTH LOUISIANA

BIENVILLE PARISH—		
W. P. Wallace, Ashley 1, 15-16-10	¶8	2005
CADDO PARISH—		
Magnolia, Dillon 18, 24-21-15	5	3790
OUACHITA PARISH—		
G. E. Jordan, C. J. Wall 1, 12-18-3e	¶¼	3347
Interstate Nat. Gas Co., Hodges 1, 4-19-3e	¶3½	2185
WEBSTER PARISH—		
Northwest La. Gas Co., Pine Woods Lbr. Co. 9, 37-23-11	*	3100

SOUTH LOUISIANA

EVANGELINE—		
F. I. Getty, Getty 1	50	1900
LOREAUVILLE—		
Gulf, La. State Z-8	*	1240
SULPHUR—		
Union Sulphur Co., Fee 729	*	....

TEXAS

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Stubblefield et al, Cooper-Roxana 1	150	3116
GRAY COUNTY—		
Perkins-Cullum et al, G. H. Saunders 1-B	45	2928
The Texas Co., H. M. Davis 4	*	3296
S. W. McLarty 1-C	40	2880
G. H. Saunders 7	600	2661
United Eight O&G Co., E. B. Clay 1	300	3251
HALL COUNTY—		
Rio Bravo Oil Co., W. E. Hughes 1	*	4500
HUTCHINSON COUNTY—		
Phillips Pet. Co., Sanford-Garland 3	65	2934
WHEELER COUNTY—		
Martin & Dubose, Close 1	¶55	1460

CENTRAL WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BROWN COUNTY—		
Bruce et al, Shields 1-A	*	640
Burris et al, Newton 11	20	1220
Daniels et al, Leslie 1	*	1355
Davis et al, Thompson 1	*	1970
Dennis et al, Morren 1	*	1305
Garrett & Hammon, Starkey 2	*	1215
Humble O. & R. Co., Byler 9	100	1324
Hodnett 18-A	7	1209
Fuller 1	*	1801
McCartney et al Suttles 1	*	1155
Mook-Texas Oil Co. & Wakefield, Newton 5	*	1384
Phillips Pet. Co., Hickman 18	*	1295
Prairie O. & G. Co., Reaves 1	*	1327
Roff et al, Bull 1	*	1148
Royalty Oil Corp., Jopling 1-B	*	1773
Valley Oil Co., Teston 12	50	1205
CALLAHAN COUNTY—		
Hurley et al, Freeman 1	*	701
Moutray Oil Co., Hatchett 12	*	375
The Texas Co., Williams 1	*	376
COLEMAN COUNTY—		
Dunaway et al, Baugh 1	*	1401
Manhattan Oil Co., Featherston 1	*	4325
Red Bank Oil Co., Blair 1	*	3199
Taylor et al, Young Bros. 1	¶5½	1658
The Texas Co., Beatty 1	20	1117
EASTLAND COUNTY—		
Arnold et al, Rust 2	¶¼	1569
Hammon Oil Co., Miller 2	*	4000
Thompson et al, Green 1	*	2040
PALO PINTO COUNTY—		
Hughes et al, Perkins 1	*	3825
SHACKELFORD COUNTY—		
Cranfill & Reynolds, Flippen 1-D	*	1285
Mid-West Explo. Co., Dyer 3	*	1185
Morrison Oil Co., Nail 1	*	1200
Roeser-Pendleton & Marland, Cook 33-A, (Sec. 61)	75	1249
Cook 9-B, (Sec. 61)	40	1342
Cook 10-B, (Sec. 61)	40	1344
Terry et al, Flippen 2	*	1205
Wichita Prod. Co., Myer 5	¶½	631
Myer 6	25	1004
STEPHENS COUNTY—		
Phillips Pet. Co., Stoker 4-A	*	4445
States Oil Corp., Hall 1	*	4415

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Earl Clayton & The Texas Co., Engle 1	*	1552
W. B. Corlett & American Ref. Properties, Cernosek 6	20	1438
C. W. Gilliland et al, Symank 1	25	1452
Harry Hines & Petroleum Prod. Co., Phillips 1	25	1180
D. O. Johnson et al, Wilson 5-C	110	1575
P. J. Lea & Daniel, Williams 3	*	590
Madden & Hunt, Richardson 14	60	1298
McLaughlin Bros. et al, Jackson 1	*	1577
Perkins & Cullum, Williams 3	6	615
Prairie O. & G. Co., Richardson 3-E	8	1267
Reno Oil Co., Parrish 5-A	10	1582
Jim Turner et al, Lyles 4	100	1704
BURKBURNETT—		
Magnolia Pet. Co., S. L. C. George 3	*	1969
CLAY COUNTY—		
A. C. Camp et al, Johnson 1	*	404
COOKE COUNTY—		
Powell Oil Co., Dennis 1	10	1555
ELECTRA—		
J. Cable et al, H. B. Hines 1	*	850
Hammon & Garrett, McCarty 5-D	30	1325
Harry Hines et al, Waggoner Bros. 13	35	1451
Mount & Graham, Burnett 1-B	5	1577
Ryan Con. Pet. Corp., Nance 105	100	1392
J. D. Nance 106	40	1410
FOARD COUNTY—		
Empire & Marland Prod. Co. Halsell 1	*	3212
K-M-A AND IOWA PARK—		
Coleman & Coppock, K. & K. 13	35	1028
Comac & Prairie, Bishop 3	25	1787
Humble O. & R. Co., W. H. Taylor 7	200	1487
W. H. Taylor 8	70	1487
W. H. Taylor 9	200	1492
Staley-Wynne et al, K. & K. 11	180	1485
K. & K. 12	400	1491
MONTAGUE COUNTY—		
Chambers & Anchor, Parr 1	*	942
WILBARGER COUNTY—		
Consolidated Oil Co., Waggoner 3-B	*	1890
Cosden & Co., Waggoner 33-B	60	2327
Fain-McGaha Oil Corp., Waggoner 2-AA	175	2400
Phillips Pet. Co., Waggoner 2-AA	*	2601
Waggoner 3-FF	60	2292
Waggoner-Norwood 3	105	2387
Staley-Wynne et al, Waggoner 1-K	*	1975
Stidham & Thrasher, Waggoner 1	*	2500
The Texas Co., Waggoner 8-C	80	2418
Waggoner Ref. Co., Waggoner 6-F	15	2405
Waggoner 4-G	100	2458
YOUNG COUNTY—		
Booth Oil Co. et al, Graham 3	8	1101
Bradstreet et al, Snider 1	65	565
L. T. Burns et al, Sullivan 1	*	606
Carter & Ruff, Gragg 1	*	865
Fain-McGaha Oil Corp., Campbell 1-H	*	958
Holbrook & Woods, Watson 4-A	*	820
Hurst et al, Drumm 1	*	610
Kleiner et al, Langston 27	35	558
Panhandle Ref. Co., Weems 1	*	702
Panhandle et al, Prideaux 12-C	20	614
Pennell et al, Drumm 1	*	623
Petroleum Prod. Co., Parrish 5-A	5	1106
Rhoades et al, Eichelberger 1-A	*	972
Riggs et al, Sweet 11	*	601
Underwood Drilling Co. et al, Campbell 4	*	1030
Campbell 5	*	945
Walton et al, Prideaux 1	35	460
Wootten & Reed, Dailey 1	*	612

Favorable Show in Deep Test at Rincon

Ventura, Calif.—A good oil sand has been found between 6600 and 6630 feet in the Richfield Oil Company's Hobson Fee 1, the second deep test in the Rincon field. Although somewhat deeper than the oil sand in Miley-Hobson 1, the formation contains more oil and is more uniform. The well will be cored as long as the oil sand continues. The company is still wrestling with Miley-Hobson 1, which has failed to produce satisfactorily after several production tests. A compressor was installed but failed to remedy the excessive flow of sand.

The Rincon field presents a disappointing picture, with only a few drilling wells and a production of less than 4000 barrels from 27 wells. Efforts to extend the field in two directions have ended in failure. Even wells in the center of the proven area are small.

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CRANE COUNTY—		
Gulf Prod. Co., J. T. McIlroy 59	235	2895
Crier-McIlroy 7	250	2895
HOWARD COUNTY—		
Magnolia Pet. Co., Roberts 5	500	2984
Pure Oil Co., Otis Chalk 8	50	1771
Ward Oil Co., Roberts 4	1800	2974
PECOS COUNTY—		
The California Co., Smith 1, Lse. 1, (Sec. 21)	30,000	1443
WINKLER COUNTY—		
Independent O. & G. Co., Cowden 3	*	3249
Shell Pet. Corp. & The Texas Co., Ida Hendrick 11-A	4500	2934
Skelly Oil Co., Hendrick 1-C	12,000	3040
Southern Crude & Westbrook, Hendrick 2-E-T-89	35	3180
Ida Hendrick 3-D-T-88	4000	2980
T. G. Hendrick 5-H-T-88	10,000	2968
T. G. Hendrick 4-N-T-88	960	2641

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BIG CREEK—		
Gulf, T. W. Davis 36, wo	1500	3620
BLUE RIDGE—		
Watts Bros. Oil Co., Blakely 8, wo	10	1990
GOOSE CREEK—		
Gulf, Stateland Oil Co. 35	65	2520
Humble, Jones-Stateland 10, dd	15	2510
ORANGE—		
Sun Oil Co., Browne 6	*	6125
PIERCE JUNCTION—		
Navarro Oil Co., Humble-Dooley 1, dd	700	4030
T. G. Shaw et al, Fitzsimmons D-2	*	4285
SARATOGA—		
Rio Bravo Oil Co., B. B. B. & C. Fee 105	70	2520
SOUTH LIBERTY—		
Gulf, Marrs McLean 4	90	850
Marrs McLean 6	400	815
Wm. Chambers Fee 5	*	890
Sun Oil Co., Mitchell 30	100	900

SOUTHWEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
WEBB COUNTY—		
Sun, Yeager-Strohman A-13, Albercas field	250	2162
Simms Oil Co., Dinn 3, Cole field	¶40	1770
Casner-Danmier, Benivides 1, blk 6, sur 11	¶6	1530
O. W. Killam, Bruni 3, Cole pool	¶30	2300
DUVAL COUNTY—		
Sun, Norton 2, blk 19, sur 250 Schoolfield-O'Byrne pool	110	2363
Schoolfield & O'Byrne, Hahl 1 Schoolfield-O'Byrne pool	75	2365
Onyx Pet. Co., Krauter 3, blk 20, sur 250	150	2348
ZAPATA COUNTY—		
O. W. Killam, Cuellar 10, Cerrito Blanco Grant	60	1474
Cuellar 11, Cerrito Blanco Grant	60	1462
SALT FLAT—		
DeArmond, Carter 2	¶	630
Gulf, Smith 8	300	2704
Shell, Malone 3	95	2690
Sun, Malone 4	530	2714
The Texas Co., Merriweather	130	2616

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
PANOLA COUNTY—		
S. H. Gardner et al, Lawless 1, J. L. Matthews sur	¶1	2804

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
OUACHITA COUNTY—		
Little Fay Oil Co., Canada 1, 24-15-16	15	2058
Shell, Williams 4, 34-15-15	260	1959
UNION COUNTY—		
H. L. Hunt, Inc., Gregory 12, 10-17-14	*	2200
Marine Oil Co., J. F. Sample 2, 7-17-13	¶15 and 700	3051
Rushing et al, Gregory 7, 11-17-14	106	3214
Skelly Oil Co., J. M. Gregory 1, 15-17-14	*	2610

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountin States:

	Week ending Jan. 26	Prev. ious Week	Total This Month	Total This Year	This Week Last Yr.	This Month 1928	T'tl to Date 1928	1928 Year Total
Arkansas	6	3	14	14	2	11	11	331
California	33	20	100	100	26	88	88	1,207
Louisiana	..	21	49	49	8	50	50	680
Kansas	38	21	98	98	35	86	86	1,032
Oklahoma	93	71	271	271	67	199	199	3,744
Texas	165	169	595	595	113	422	422	8,297
Total	335	305	1,127	1,127	251	856	856	15,291

TEXAS

ARCHER COUNTY — Theo. Harris et al, Wichita Falls, Roller 2, W. C. Watts sur, 150 ft from n and 750 ft from w line. C. U, Beasley, Electra, Abercrombie 1, B 41, Harris sur, 450 ft fro e and 150 ft from s line. Magnolia Pet. Co., Dallas, Chilson 1, S 2, B 3, DCSL sur, 150 ft from s and e lines. L. G. Bradstreet Fort Worth, Snider 1, R. Wilson sur, 450 ft from n and 150 ft from e line; Snider 1, R. R. Wilson sur, 150 ft from n and e lines. Magnolia, Dallas, Hudson 13, B 8, Harris sur, 450 ft from n and 150 ft from e line. Humble Wichita Falls, Kunkel 1, S 3 BBB&C sur, 150 ft from n and e lines. McCarty Oil Co., Wichita Falls, McCrory 1, B 22, Amer. Trib. sur, 450 ft from n and w lines of lot 6.

AUSTIN COUNTY — Humble, Houston, Ueckert 1, T. Bell sur, 300 ft from ne and se lines.

ATASCOSA COUNTY — W. R. Hamilton, San Antonio, Hughes 14, No. 518 J. Sharp sur, 565 ft s of No. 6.

BROWN COUNTY — Rhodes & Highers, Breckenridge, Dunn 1, No. 789 J. Delgado sur, 150 ft from s and w lines. Jordan & Buzzard, Cisco, Caldwell 2, KCSL sur, 800 ft from n and 1425 ft from e line. Woodley Pet. Co. & Young Bros. & Alexander, Fort Worth, Hickman 21, No. 783 T. Benson sur, 750 ft s of No. 19. Lloyd Oil Corp., Fort Worth, Collier 16, S 139, W. A. Smith sur, 300 ft s of No. 9.

BEXAR COUNTY—Schimmel Prod. Corp., Fort Worth, Frees 1, B 2, CEPI&M sur, 250 ft from e and 829 ft from s line. F. H. Eckert, San Antonio, Dobrowlski 3, S 4, No. 52, 300 ft s of No. 1. Gulf Prod. Co., Houston, Gutz 1, No. 3 M. F. Rodriguez sur, 150 ft from n and w lines.

BASTROP COUNTY — Atlantic Oil Prod. Co., Dallas, Yost 4, A. Garcia sur, 300 ft w of No. 1.

BRAZORIA COUNTY—Rycade Oil Corp., Houston, Wisdom 21, H. N. Cleveland sur, 2219 ft from e and 1107 ft from s line.

CALLAHAN COUNTY—Moutrys Oil Co., Abilene, Hickman 34, S 149, BBB&C sur, 300 ft e and 90 fe n of No. 33. Hatchett 11, s 29, D&D Asy. sur, 300 ft w of No. 9. Texas Co., Wichita Falls, Willams 1, S 24, D&D Asy. sur, 150 ft from w and 1190 ft from s line. Gibson & Johnson, Abilene, Hughes 2, S 129, D&D Asy sur, 150 ft from n and 450 ft from e line. Ungren & Frazier, Putnam, Williams 1, 2293 TE&L sur, 150 ft from e and 450 ft from s line. Wittmer O. & G. Properties, Pittsburgh, Penna., Cunningham 1, S 2, T&P Ry. sur, 400 ft from n and 900 fe from e line. L. G. Bradstreet Co., Fort Worth, Miller 11, No. 798 G. M. Vigal sur, nw corner.

COLEMAN COUNTY — Robt. Watchorn, Oklahoma City, Okla., Vanderford 1, S 294, W. Worley sur, 200 ft from n and 700 ft from w line. E. W. Jarmon, Fort Worth, Polland 1, No. 494, P, Young sur 150 ft e of center of w line. Routh & Faurot,Valera, Gholson 1, No. 738 D. A. Murdock sur, 250 ft from s and 528 ft from e line. Howard Samcuell et al, Coleman, Robertson 2, S 224 E. Votaw sur, 1702 ft from e and 150 ft from s line. Whiteside ½ Mitchell, Coleman, Stafford 3, No. 275 B. Alerata sur, 1250 ft from n and e lines.

CHAMBERS COUNTY—Pure Oil Co., Fort Worth, Mayes 1, E. H. Wallis sur, 715 ft from e and 4163 ft from w line. Yount-Lee Oil Co., Beaumont, Richardson 3, Wm. Bloodgood sur, 40 ft from e and 218 ft from n line.

COOKE COUNTY—Westheimer & Daube, Ardmore, Okla., Cox 1, S. Hernandez sur, 150 ft from s and w lines. Superior Oil Prod. Co., Tulsa Okla., Rudd 1, GH&H sur, 750 ft from w and 450 ft from s line. Shell Pet. Corp., Wichita Falls, Dennis 2, T. Hutchinson sur, 472 ft from n and 150 ft from w line.

CALDWELL COUNTY—Humble, Houston, Moses 1, G. Hinds sur, 150 ft from w and 461 ft from s line.

CARSON COUNTY—McIlroy Oil Co., Amarillo, Fee 1, S 115, B 4, I&GN sur, 330 ft from s and w lines. Skelly Oil Co., Tulsa, Okla., Schafer 11, S 98, B 4, I&GN sur, 990 ft from w and 330 ft from s line; 12, 1750 ft from w and 330 ft from s line.

EASTLAND COUNTY—W. D. Smith et al, Eastland, Rio Bravo 1, S 11, B 4, H&TC sur, 150 ft from n and e lines. Jank L. Hammon Jr., Ardmore, Okla., Turner B1, B4, H&TC sur, 150 ft from n and w lines. Barkley & Crotty Ranger, Browning 1, J. A. Weeks sur, 150 ft e of center of w line.

EDWARDS COUNTY — A. M. Griffith, Houston, Wardlaw 1, S 60, B V8, J. S. Clift sur, 1050 ft from w and 150 ft from s line.

ERATH COUNTY—T. P. Coal & Oil Co., Ranger, Latimer 2, Skelly sur, 375 ft from s and 425 ft from e line.

FORT BEND COUNTY—South Texas Prod. Co., Houston, Lafferty 3, No. 3 J. Poitevent sur, 50 ft from w and 100 ft from s line. Gulf Prod. Co., Houston, Davis 51, M. Young sur, sur, 250 nw of No. 46. Moody Corp., Tulsa, Okla., West-Schenck 5, T. Hobermaker sur, 50 ft from w and 451 ft from n line. Texas Co., Houston, Farmer 2, J. Scott sur, 450 ft from nw and 300 ft from sw line.

FISHER COUNTY—Gilman, McMurray & French, Cisco, Cleveland 1, S 116 B 2, H&TC sur, 791 ft from s and 1320 ft from e line.

GUADALUPE COUNTY—Simms Oil Co., Dallas, Jandt 1, J. D. Clements sur, 150 ft from n and w lines.

GRAY COUNTY—Texas Co., Wichita Falls, Chapman 5, S 51, B 25, H&GN sur, 1178 ft from w and 330 ft from s line.

HOWARD COUNTY—Group I Oil Corp. & Marland Oil Co., Big Springs, Settles 5, S 133, B 29, W&NW sur, 660 ft s of No. 4; 6, 660 ft s of No. 5. Howard County Oil Corp., Big Springs, Kloh Morgan 1, S 5, B 32, Twp. 2 8 sur, 150 ft from ne and 330 ft from se line. Moody Corp., Tulsa, Okla., Roberts B15, S 137, B 29, W&NW sur, 330 ft from s and 380 ft from w line. Group I Oil Corp. & Marland Oil Co., Big Springs, Overton 1, S 5, B 32, T&P sur, 2310 ft from e and 1650 ft from s line. Gulf Prod. Co., Fort Worth, Clay 5, S 135, B 29, W&NW sur, 660 ft s of No. 4.

HARRIS COUNTY—Cullen & West Prod. Co., Houston, Hicks-Higbee 1, Sec. F, No. 57 J. Hamilton sur, 50 ft from nand 503 ft from w line. South Texas Petroleum Co., Houston, Morris 3, W. T. Charles sur, 245 ft from n and 100 ft from w line. Texas Co., Houston Stevenson 39, J. B. Stevenson sur, 335 ft from w and 46 ft from s line.

HARRISON COUNTY—Nick Barbare, Waskom, Furrh 7, J. Sroht sur, 5306 ft from n and 1585 ft from e line.

HARDIN COUNTY — Ada Belle Oil Co., Batson, Fee 124, Copley sur, 48 ft from n and 38 ft from e line. E. W. Skinner Oil Co., Saratoga, Sissler's 2, M. E. Hopkins sur, 26 ft from n and 225 ft from e line.

IRION COUNTY — Fuhrman Pet. Corp., Dallas, Sugs 1, S 3009, B 24, H&TC sur, center. Kimbrough & Flinshbaugh, San Angelo, Tankersley 1, S 712, W. Willig sur, 160 ft from n and 200 ft from e line.

JONES COUNTY — Phillips Pet. Corp., Bartlesville, Okla., Windham 3, S 17, B 19, T&P sur. Snowden & McSweeney Co., Fort Worth, Bickley 6, S 50 B 18, T&P sur, 330 ft from s and w lines. Sedgwick Oil Co., Abilene, Routh 1, Austin & Williams sur, 660 ft from n and 1320 ft from w line. Robert Oil Corp. & Cosden & Co., Inc., Breckenridge, Grayson 8, S 13, B 18, T&P sur, 325 ft s of No. 6. McClannahan & Roxana Pet. Corp., Dallas, Hill 1, S C&M sur, 150 ft from s and w lines. Phillips Pet. Corp., Bartlesville, Okla., Windham 2, S 17, B 19, T&P sur, 650 ft w of No. 1. James 4, M. Robinson sur, 990 ft from e and 330 ft from s line. McGinley-Sigler Co., Fort Worth, Wittemore 1, S 39, BBB&C sur, 693 ft from s and e lines.

JIM HOGG COUNTY—Rycade Oil Corp., Houston, Yeager-Stroman R8, No. 5 Las Animas sur, 1950 ft from n and 150 ft from e line; R9, 2250 ft from n and 150 ft fro e line; R10, 2577 ft from n and 150 ft from e line. Brooklyn Oil Co., Dallas, Garza 2, S 40, B 16, 150 tt from n and e lines.

JEFFERSON COUNTY—Yount-Lee Oil Co., Beaumont, Gladys 76, B 55, J. A. Veatch sur, 78 ft from e and 118 ft from n line; 77, B 98, J. A. Veatch sur, 15 ft from w and 108 ft from n line; 77, B 99, J. A. Veatch sur, 13 ft from s and 112 ft from w line; McFaddin 92, P. Humphreys sur, 685 ft from w and 983 ft from n line.

JACK COUNTY—Leidecker & Leidecker, San Angelo, Box 1, J. M. Box sur, 150 ft from n and w lines.

KINNEY COUNTY—Lloyd Oil Corp., Fort Worth, Moore 1, No. 117 sur, 1320 ft s of center of n line.

LIBERTY COUNTY — Union Explo. Co., Houston, Esperson 2, C. W. Fisher sur, 2700 ft from w and 175 ft from s line. Texas Co., Houston, Staiti 19, M. G. White sur, 100 ft e of No. 18.

LOVING COUNTY—Lockhart & Co., Pecos, Fee 1, S 91, B 1, W&NW sur, nw corner; Hubbard 1, S 84, B 33, H&TC sur, 2640 ft from ne and 660 ft from nw line.

MITCHELL COUNTY—Simms Oil Co., Dallas, Ellwood 1, S 29, B 18, S. P. Ry. sur, center.

MOORE COUNTY — Phillips Pet. Corp., Bartlesville, Okla., James 4, M. Robinson sur, 990 ft from e and 330 ft from s line.

MEDINA COUNTY—E. R. Thomas, San Antonio, Conger 1, S 469, J. J. Keppler sur, 200 ft from n and e lines. W. M. Allen Catarina, Haeglin 1, No. 579 J. Reed sur, 300 ft s of center of n line. F. M. Cline, Harris, Bendele 1, No. 593 sur, 600 ft from w and 150 ft from s line.

MONTAGUE COUNTY—Texas Co., Houston, Salmon 3, Wm. Zuber sur, 250 from n and e lines. Gist 7, Wm. Donohoo sur, 200 ft w of center of e line.

NUECES COUNTY—R. & G. Corp., Laredo, Brown 1, S 87, G. H. Paul sur, 300 ft from s and w lines.

NAVARRO COUNTY—J. K. Hughes Dev. Co., Mexia McCown 1, M. Webb sur, 150 ft from n and w lines.

ORANGE COUNTY—Texas Co., Houston, Kuhn 1, No. 2 M. E. Hall sur, 600 ft from n and 400 ft from e line.

PECOS COUNTY—Marland Oil Co., Ponca City, Okla., Blakeslee 1, S 100, B 8, H&GN

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sur, 330 ft n of center of s line. California Co., Colorado, Smith 7, S 23, B 194, GC&SF sur, 1713 ft from w and 866 ft from s line; Smith 3, S 21, B 194, GC&SF sur, 799 ft s of No. 1. McCarty Oil Co., Wichita Falls, Gray 1, S 591, GC&SF sur, 200 ft from s and 150 ft from w line.

PANOLA COUNTY — Texas Co., Wichita Falls, Adams A8, B. C. Jordan sur, ne corner; Adams B10, I. Hatcher sur, 135 ft from w and 360 ft from s line.

REFUGIO COUNTY—T. P. Morgan, San Antonio, Refugio 1, Refugio sur, north central. Houston Oil Co., Houston, Heard 5, Refugio sur, 300 ft w of No. 4.

SHACKELFORD COUNTY—Crabb & McNeel, Cross Plains, Matthews 2, S 29, B 1, E. T. Ry. sur, 300 ft s of No. 1. Cranfill & Reynolds, Cisco Diller 1, S 5, B1, E. T. Ry. sur, se corner. Tannehill, Kiser & Flemming, Albany, Matthews 3, S 28, E. T. Ry. sur, 150 ft from n and 1150 ft from w line. A. C. Walker, Albany, Huskey 14, 529 TE&L sur, 300 ft e of No. 13. Dull Earls, Texas Co., Albany, Matthews 4, S 32, B 1, E. T. Ry. sur, 1155 ft from n and 150 ft from e line; Matthews 4, S 32, E. T. Ry. sur, 150 ft from e and 165 ft from s line. Roeser & Pendleton & Phillips Pet. Corp., Bartlesville, Okla., Bernstein 2A, 532 TE&L sur, 300 ft se of No. 1. Roeser & Pendleton & Marland Oil Co., Ponca City, Okla., Cook A34, S 61, E. T. Ry. sur, 419 ft e of No. 32. Ohio Texas Oil Co., Inc., Albany, Matthews 12, S 29, E. T. Ry. sur, 300 ft s of No. 11; 13, 50 ft s of No. 5. Texas Consolidated Oil Co., Breckenridge, Isbell 6B, 818 TE&L sur, 150 ft from n and e lines. A. C. Walker, Albany, Huskey 15, 529 TE&L sur, 300 ft e of No. 8.

SUTTON COUNTY — L. G. Priest, Fort Worth, Alison 1, S 52, B A, GWB sur, center of sw¼.

STEPHENS COUNTY—J. M. Nunn, Eastland, Bussell 1, S 63, B 6, T&P sur, 200 ft from n and w lines.

TOM GREEN COUNTY—Williams & Williams Drilling Co., San Angelo, Wilke 1, S 3, D&D Asy. sur, 5210 ft from e and 2580 ft from s line.

TRAVIS COUNTY—Mid-Kansas O. & G. Co., Tulsa, Okla., Wolff 1, G. C. Jennings sur, 150 ft from n and 450 ft from e line.

THROCKMORTON COUNTY—Gilman & McMurray, Cisco, Frazier 3, 914 TE&L sur, 274 ft n of center of s line.

UPTON COUNTY—L. H. Wentz, Eastland, Sherk 5, S 35, B B1, MK&T sur, 662 ft e of No. 1.

WICHITA COUNTY—Panhandle Ref. Co., Wichita Falls, Burnett 5, S 2, G. P. Meade sur, 300 ft n of No. 4. Shell Pet. Corp., Wichita Falls, Denny 4, H. B. Balch sur, 300 ft w of No. 1. Alexander & Goldsmith, Wichita Falls, Roller 1, McKinney & Williams sur, 150 ft from s and w lines of B 16. Riner & Bailey, Wichita Falls, Michie 3, L. Netherly sur, 350 ft n of No. 1. Staley, Wynne & Co., Wichita Falls, Kemp & Kempner 13, B 82, WVFL sur, Shappell Oil Co., Wichita Falls, McCarty 10, W. R. Eaves sur, 150 ft from n and 450 ft from e line. Louis Barclay, Wichita Falls, Kemp & Kempner 1, H&GN sur, 285 ft from w and 1050 ft from s line. J. M. Hemby, Electra, Duke 2, S 20, B 9, H&GN sur, 350 ft s of No. 1; 1, 150 ft from n and 93 ft from e line.

WEBB COUNTY—Wm. F. Morgan, Inc., San Antonio, Benavides 1, No. 693 sur, 150 ft from s and w lines. O. W. Killam, Laredo, Bruni 32, B 64, Arriba sur, 700 ft from w and 1360 ft from s line; Bruni 3, No. 9 M. Arispe sur, 1530 ft from nw and 355 ft from ne line. Magnolia, Dallas, Benavides 1, B 694, BS&F sur, 150 ft from s and s lines. Houston Oil Co., Houston, Benavides D19, S 753, B 5, sur, 666 ft from e and 150 ft from s line B 5; Benavides G1, No. 701 sur, 160 ft from s and e lines. Beaven & Marts, Laredo, Johnsn 1, S 602, B 10, sur, 150 ft from s and w lines. Livingston & Payne, Laredo, Guerra 1, S 58, sur, 917 ft from e and 497 ft from s line. Union Explo. Co. & Morgan, Houston, Benavides 1, S 694 sur.

WINKLER COUNTY—Llano Oil Co. & Shell Pet. Corp., Fort Worth, Scarborough 4, S 1, B C22, sur, 330 ft from n and e lines. Humble, Wichita Falls, Hendrick C, C4, S 10, B B 12, sur, 330 ft from w and 2200 ft from s line; No. C5, 330 ft from e and 2150 ft from s line.

WILBARGER COUNTY—Fain-McGaha Oil Corp., Wichita Falls, Waggoner DD 2, S 32, MEP&P sur, 300 ft we of No. 1; Waggoner S 30, S 24, B 4, HT&B sur, 406 ft se of No. 13. Shaw Oil Co., Wichita Falls, Waggoner E 4, S 18, B 4, H&TC sur, 493 ft ne of No. 2; No. 5, 343 ft ne of No. 3.

WHARTON COUNTY—Ferdinand Heine, Jacksonville, Woytek 10, S. F. Austin sur, 155 ft from e and 490 ft from s line.

WHEELER COUNTY—Gibson Oil Corp., Amarillo, Bentely 60, S 42, B 24, H&GN sur, 330 ft from n and w lines. Mudge Oil Co. of Texas, Duncan, Okla., Hicks 1, S 52, B 17, H&GN sur, sw corner.

YOUNG COUNTY—Fain-McGaha Oil Corp., Wichita Falls, Campbell H 1, 1375 TE&L sur, 1150 from n and 650 ft from e line. M. L. Richards, Wichita Falls, Campbell 2, 1389 TE&Lsur, 316 ft from w and 150 ft from s line. Barkley & Meadows, Wichita Falls, Stewart 21, D. Dawson sur, 125 ft from n and 110 ft from w line. Alex. Strachan, Fort Worth, Nall 1, 1998 TE&L sur, 750 ft from w and 450 ft from s line. Prairie O. & G. Co., Ranger, Campbell 6, 1370 TE&L sur, 900 ft from n and 2100 ft from e line; Kunkel 6, S 4, BBB&C sur, 300 ft e of No. 5. Wooten & Reed, Graham, Dailey 1, S. Tynes sur, south central. Superior Oil Co. & Riggs & Oliphant, Graham, Sweet 11, 1488 TE&L sur, 1950 ft from n and 1200 from e line. Bullington, Lee, Wichita Falls, Boone 7, No. 1 BBB&C sur, 600 ft e of No. 6 P. F. Gwynn, Wichita Falls, Kunkel C 3, BBB&C sur, 150 ft from w and 280 ft from s line. Kleiner, H-Y Oil Co. & West, Cisco, Langston 27, 1490 TE&L sur, 300 ft we of No. 26.

ZAPATA COUNTY—W. R. Duke, Wichita Falls, Martinez 1C, C. Redondo sur, 330 ft from e and 150 ft from s line.

ZAVALLA COUNTY—Ike T. Pryor, San Antonio, Fee 2, E. W. King sur, 1413 ft from e and 520 ft from s line.

KANSAS

BUTLER COUNTY — Prairie & Connell, Sherman 1, ne sw 17-26-6e. Empire, Sharrock 6, nw se sw, 27-27-5e. Air Capitol O. & G. Co., Doughty 4, e ne sw, 5-27-6e.

COWLEY COUNTY — Kentucky Gas Co., Dobson 5, sw ne, 24-33-6e. Kentucky Gas Co., Barnhart 1, nw sw se, 7-33-7e. Kentucky Gas Co., Sillman 1, ne sw sw ne, 13-34-6e.

ELLIS COUNTY—Phillips, Heider 1, ne sw, 8-12-17w.

GREENWOOD COUNTY — Independent, Sheppard 8, se sw, 2-22-10e. Independent, Sheppard 9, ne nw, 11-22-10e. The Texas Co., Edwards 2, nw se, 21-22-11e. Mohawk O. & G. Co., Essick 1, nw ne sw, 7-27-11e. Mid-Continent, Geist 3, nw sw, 13-24-12e. Superior, Bonnett 5, sw nw sw ne, 13-24-22e. Mashall et al, Bonnett 9, sw se sw nw, 13-124-12e.

HARVEY COUNTY — Hartman & Skaer, Seaman 1, nw ne se, 26-24-1e.

McPHERSON COUNTY — Helmerick & Payne, Resser 1, ne se sw, 23-21-2w.

ROOKS COUNTY—Kruger et al, Raffamn 1, se nw sw, 14-17-16w.

RUSH COUNTY — Wilcox O. & G. Co., Schwartzkopf 1, nw sw, 27-17-17w.

RUSSELL COUNTY—Mid-West Explo. Co., Baster 22, nw se sw, 32-13-15w; Mid-West Explo. Co., Bungardt 6, nw, 31-12-15w.

SEDGEWICK COUNTY—Vickers Pet. Co., Nissen 2, nw sw ne sw, 6-26-1e. Washabaugh et al, Harrison 1, nw ne ne, 3-26-2w. Marshall et al, Dix 1, c sw, 4-25-2w. Shawver & Dickey, Kuhn 1, sw nw sw, 31-25-1e. Brandeberry & Hinkle, Whiting 1, nw sw, 31-25-1e. Sutter & Pyle, Caldwell 2, ne nw se sw, 6-26-1e. Bu-Vi-Bar Pet. et al, Thad Goodrich 2, sw nw sw, 6-26-1e; Bu-Vi-Bar, Goodrich 1, sw nw sw se, 6-26-1e. Montour Oil Co., Lavendar 2, se sw, 6-26-1e; Montour Oil Co., Lavendar 1, cwl e½ se sw, 6-26-1e. Davis & Skelly, Wilson 5, cnl ne se ne, 1-26-1w; Davis & Skelly, Wilson 4, ne se ne ne, 1-26-1w; Davis & Skelly, Wilson 3, cnl se ne ne, 1-26-1w. G. L. Ramsey et al, Evans 1, sw, 2-26-1w. Phillips, Difford 3, ne, 1-26-1w; Phillips, Difford 2, se ne ne ne, 1-26-1w. Davis & Skelly, Wilson 2, sw ne ne, 6-26-1w. Derby Oil Co., Ramsey 1, sw nw sw, 31-25-1e.

OKLAHOMA

BECKHAM COUNTY—Sayre O. & R. Co., Porch 1, sw nw se, 24-9-23w.

CARTER COUNTY—H. L. Sturm, Fish 2, sw ne sw, 35-3s-2w. Magnolia, Lewis 6, nw ne ne, 23-1s-3w; Denny 3, ne cor, 30-1s-2w; Putman 1, nw ne sw, 30-1s-3w; Hefner 6, nw ne sw, 33-1s-3w.

CREEK COUNTY—J. H. Winemiller, Colbert 1-a, sw se, 9-19-7e. R. E. Perry, Hinton 1, ne nw sw, 25-19-8e. Dixie Oil Co., Tahkaney 5, se sw se, 7-19-9e. H. U. Bartlett, Sewell "B" 2, sw nw ne, 18-19-9e. Silurian Oil Co., Starr 26, sw se se, 8-18-7e. Schermerhorn, Harker 1, se nw nw, 14-18-10e. B. C. Burnett, Fife 1, ne sw sw, 28-18-11e. Lynch et al, Brown 1, ne sw nw, 4-18-12e. Jackson & Wise, Sapulpa 3, c nw ne, 3-17-11e. Curtis Oil Co., McIntosh 1, nw sw ne, 13-17-11e. Roxaline Oil Co., Boling 2, c sw sw, 27-17-12e. L. Emery, Comus 1, c sw sw, 4-16-9e. Nowata O. & R. Co., Sethel 1a, se sw sw, 9-16-9e. C. O. Buckles, Frank 1a, nw sw sw, 18-16-13e. Shell, Byrd 1, ne nw nw, 15-15-8e (OWDD). Pennock Oil Co., Clinton 20, (OWDD), cel ne sw, 15-15-10e. C. G. Tibbens No. 3, cnl ne nw, 9-14-10e.

COTTON COUNTY—Cullum & Perkins, sw ne se ne, 3-2s-10w. Shasta Oil Co., Chambers 3, nw sw se nw, 2-2s-10w.

GRADY COUNTY—Oklahoma Gas Utilities Corp., Gann 1, nw se, 8-5n-8w.

GRANT COUNTY—Argo Oil Co., Howell 2 (OWDD) se sw sw, 14-27-3w.

HUGHES COUNTY—Champlin, Long 1, sw cor, 33-9-9e.

KIOWA COUNTY—J. R. Travis, cwl ne sw (OWDD), Hobbs 1, 7-6n-16w. Ridgeway et al, Lynn 1, cwl sw se, 7-6n-16w.

LOGAN COUNTY—Shell, McCully 6, ne sw se, 30-19-4w.

MUSKOGEE COUNTY—Colton, Lester et al, Parker 1, c nw sw, 31-12-19e.

OKFUSKEE COUNTY—A. B. Ice, Smith 1, ne nw, 35-11-11e. Ash et al, Barnett 1, nw ne nw, 6-10-12e.

OKMULGEE COUNTY—Empire, Sharp 1, cel sw sw, 29-14-12e. Rounsaville, Rentie 4 (OWDD), csl ne se, 30-12-12e. Aiken Oil Co. et al, Fox 2 (OWDD), cel se nw, 22-13-14e.

OSAGE COUNTY—W. C. Elliott 1, se ne se, 33-22-11e. Silurian Oil Co. 1, sw ne, 12-23-11e. L. G. Stanley 5, nw sw se, 36-22-8e. Wrightman Pet. Co. 1, se nw, 13-26-7e. Lewis Prod. Co. et al 3, se ne se, 15-26-6e.

PAWNEE COUNTY—Superior and Swift 1, cwl ne nw, 34-20-9e.

PONTOTOC COUNTY — Westheimer & Dabe, Patterson 2-a, (TWIN) nw cor, 29-5-8e. Homaokla, Retche 2, sw ne se, 1-4-7e.

POTTAWATOMIE COUNTY — Magnolia, Green 2, nw ne nw, 20-8-5e; Magnolia, Green 1, se nw, 20-8-5e. Skelly, Green 1, nw sw nw, 20-8-5e. Amerada, Green 2, sw nw nw, 20-8-5e. Sinclair, Bellars 10, ne se ne, 19-8-5e; Sinclair, Bellars 9, se ne ne, 19-8-5e. Superior, Pratt 1, ne nw nw, 13-8-4e. Pure, Thrailkill 1, (OWDD) sw nw, 19-7-5e. Sinclair, Nesbit 8, nw se nw, 18-7-5e; Sinclair, Nesbit 7, sw se nw, 18-7-5e. Magnolia, Brandenburg 5, se sw nw, 18-7-5e; Magnolia, Brandenburg 4, ne sw ne, 18-7-5e. T. B. Slick & Maud O. & G., Davis 7, ne nw ne, 18-7-5e; T. B. Slick & Maud O. & G., Davis 7, nw sw ne, 18-7-5e; T. B. Slick, Pugh 2, se sw se, 7-7-5e. Magnolia, Pugh 1, sw se se, 7-7-5e. Carter, McGee 1, ne se nw, 26-7-4e. Sinclair, Brandenburg 3, sw se sw, 7-7-5e. Gypsy, Miller 6, sw ne se, 18-8-5e; Gypsy, Miller 7, nw se se, 18-8-5e. Skelly & Margay Oil Co., Linger 4, se nw ne, 18-8-5e. Pure, Lindley 8, se nw se, 18-8-5e; Pure, Lindley 7, ne sw se, 18-8-5e.

SEMINOLE COUNTY—Amerada & Burke Greis, Grounds 1, se sw se, 23-9-5e. Shell & Papoose Oil Co., Maines 7, ne sw sw, 7-8-6e; Shell & Papoose Oil Co., Maines 6, sw nw sw, 7-8-6e; Shell & Papoose Oil Co., Maines 5, se nw sw, 7-8-6e. Shell & Marland, Herndon 3, sw nw ne, 7-8-6e. Sinclair, Bean 3, ne nw, 11-8-5e. Independent O. & G. Co., Lawson 5, nw se se, 1-8-5e. Mid-Continent, Fleet 14, sw nw se, 7-5-8e. Sinclair, Miller 1, ne nw se, 24-9-5e. Marland, Maines 4, nw se sw, 7-8-6e. Independent O. & G. Co., Lawson 6, nw ne se, 1-8-5e. T. B. Slick, Mulcussy 1, sw se ne, 4-7-7e; T. B. Slick, Harjo 1, nw cor, 30-7-6e. Sinclair, Amos "B" 3, ne sw, 7-5-8e; Sinclair, Amos "B" 4, sw ne sw, 7-5-8e.

STEPHENS COUNTY—Ven-Mex-Mid-Continent Oil Co., Bush 5, se nw ne nw, 3-2s-8w. Magnolia, Kagay 20, se sw se sw, 34-1s-8w. Clark & Cowden, Davidson 3, nw sw sw, 13-1s-3w. Magnolia, Green 8, sw nw nw, 13-1s-

4w. Amerada & Amos Drilling Co., Richard 1, sw ne ne, 19-2s-4w.

TEXAS COUNTY—Skaer et al, Hitch 1, nw cor, 25-1n-15e C. M.

WAGONER COUNTY — Oklahoma Nat'l. Gas Co., Cinda 3, nw sw, 22-18-17e. Elk Drilling Co., Childers 4, se nw se, 29-1817e. C. F. Finefield et al, Wolford 1, nw sw sw, 22-16-19e. Public Serv. Co., Brown 1, nw sw, 36-16-17e.

CALIFORNIA

ELWOOD—Barnsdal Oil Co., Doty 3, 22-4-29.

FRESNO COUNTY—Thoas Pet. Cohp., No. 1, 33-2-16. W. E. Hornaday and E. F. Huggins, No. 1, 32-14-18.

LAWNDALE—Richfield Oil Co., Intercity 1, 17-3-14; Paul Howard 1, 20-3-14. Continental Oil Co., Phiel 1, 21-3-14; Alexander 1, 17-3-14. Standard Oil Co., Vance 1, 21-3-14; Thomas 1, 17-3-14. Superior Oil Co., Ritter 1, 16-13-14, Union Oil Co., Root 2, 16-3-14. Earl Pet. Corp., Ltd., Sprot 1, 21-3-14. Superior Oil Co., Security 1, 8-3-14.

LONG BEACH—Macmillan Pet. Corp., No. 7, 24-4-13; No. 8,24-4-13. Max Pray, No. 3, 29-4-12. Dabney-Johnston Oil Corp., No. 30, 24-4-13; No. 31, 24-4-13.

McKITTRICK—Cymric Oil Co., No. 6, 26-29-21.

MIDWAY—Honolulu Consolidated Oil Co.'s 85, 8-32-24.

MT. POSO—Petroleum Securities Co., Glide 9, 21-27-28.

POTRERO—Associated Oil Co., Potrero 1, 34-2-14.

SANTA FE SPRINGS—Union Oil Co., Bell 43, 6-3-11. L. E. Bishop, No. 1, 5-3-11. General Pet. Corp., Santa Fe 218, 5-3-11; Santa Fe Comm. 186G, 6-3-11; Santa Fe Comm. 191D, 6-3-11; Santa Fe 222, 5-3-11.

VENTURA—Associated Oil Co., Lloyd 58, 2-3-23; Lloyd 53, 27-3-23; Lloyd 72, 27-2-23; Lloyd 73, 27-3-27; Shell Co., Taylor 36, 28-3-23.

ARKANSAS

OUACHITA COUNTY—J. E. Crosbie, Cannada 2, nw sw, 24-15-16. McDonald Bros., F. M. Wilson 1, sw nw, 5-15-18.

UNION COUNTY—Lion Oil Ref. Co., El Dorado Realty Co. 1, se se, 7-17-13. H. L. Hunt, Inc., Grepory 4, sw se, 10-17-14. Magnolia Pet. Co., W. K. Gregory 3, nw se, 15-17-14. J. B. Hawkins, W. W. Goodwin 1, nw sw, 6-17-15.

Price Reduction Slows Up San Joaquin Valley Work

Bakersfield, Calif.—Recent reductions in posted price of heavy crude produced in the San Joaquin Valley have changed the plans of several companies that had planned further activity in both proven and wildcat areas. The lower grades in many fields were reduced a full 25 cents, the new schedule calling for a flat price for oil up to 18 gravity in some fields and up to 20 gravity in others. All oil up to 14 gravity is posted at 45 cents per barrel. The reduction, in one way or another affects every field in the San Joaquin Valley. Development of such fields as Mt. Poso, Round Mountain, Kern Front and Fruitvale was further postponed by the reduction. Wildcatting probably was affected less than drilling in the proven fields, but several tests have been postponed in unproven areas. The new scale was caused by over-production in fields of Southern California, rather than an increased production in the San Joaquin Valley, but since the heavier crude is not in demand, it was the first to feel the adjustment.

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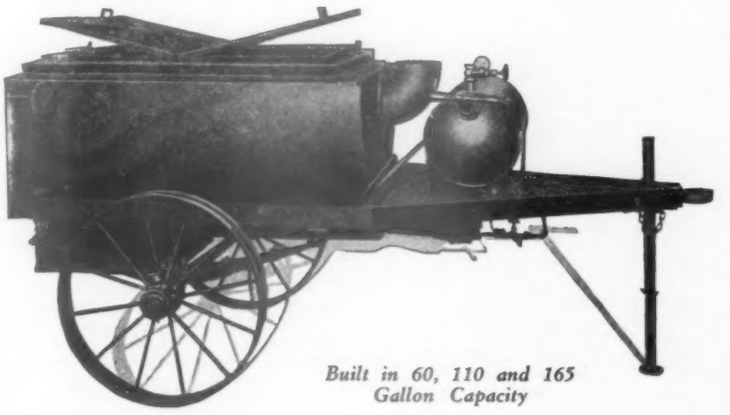

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SOUTHERN CALIFORNIA

Completions

WEST COYOTE—
Continental Oil Co.'s McNally 1... * 5912

BELLFLOWER—Dollar Oil Co.'s Blythe 1, dr 5000 ft.

CHATSWORTH—Russell Pet. Co.'s Joughin 2, dr shale and rock 760 ft.

COSTA MESA—Mesa Pet. Corp.'s B. A. 1, 16-6-10, sd 3440 ft.

DOWNEY—Associated's Taylor 1, 33-2-12, dr gray sand 6010 ft. Rio Grande's Osborne 1, 34-2-12, dr shale and rock 2000 ft.

GARDEN GROVE—The Texas Co.'s Crawford 1, 35-4-10, dr sand 3425 ft.

HUNTINGTON BEACH—Western Drilling and Producing Co.'s Meyer 1, 18-6-10, rig.

INGLEWOOD—California-Eastern Oil Co.'s Community 1, 28-2-14, dr 3300 ft.

MANHATTAN BEACH—Western Drilling and Producing Co.'s Carlin-Smith 1, rigging rotary.

MAYWOOD—Richfield's Community 1, dr shale 3600 ft.

MONTEREY PARK—Monterey Park Pet. Co.'s Jepson 1, sd 3940 ft.

NEWHALL — California-Eastern Oil Co.'s Hasley 1, 5-4-17, dr brown shale 3040 ft.

PUENTE—Richfield's Didier 1, 13 3-8-inch casing cemt 3250 ft, td 3435 ft.

HEMET—Hement Pet. Corp.'s Ward 1, dr 3225 ft.

SAN BERNADINO COUNTY — Western Pacific Oil Co.'s 3, dr rock and sand 3350 ft. Mahala Oil and Gas Co.'s 1, co 4000 ft.

SAN DIEGO COUNTY — S. S. Turner's Baler 1, dr shale 1610 ft.

IMPERIAL COUNTY—Imperial Valley Oil Co.'s 1, 32-11-10, dr 200 ft.

NORTHERN CALIFORNIA

KERN COUNTY

BUTTONWILLOW — Doheny-Stone Drilling Corp.'s Salisburt 1, 7-29-24, dr 4275 ft. Richfield's Redding 1, rig.

COMANCHE POINT—W. W. Stabler's 1, 23-32-29, dr 3250 ft, oil showings.

DELANO—S. A. Delzel's Vedder 1, 4-26-27, dr sandy shale 3315 ft.

EDISON—Symark Oil Co.'s 1, 24-29-29, dr shale 900 ft.

GOULD HILLS—Exeter Oil Co.'s Pray 2, 1-29-29, produced 15 bbls oil on test, td 870 ft.

RIO BRAVO—Pacific Coast Oil Co.'s 1, 15-19-25, rigging rotary. Elmer Oil Co.'s 1, 8-28-25, fsh for dr pipe, td 5510 ft.

ROSEDALE—Elmer Oil Co.'s 1, 33-29-26, new lcn.

SHALE HILLS—No active tests in this district.

SAN EMIDIO—Standard's 1, 35-11-22(fsh for dr pipe, td 3780 ft. Union's KCL-1, 5-10-21, dr hard sand 2000 ft.

SEMITROPIC—Richfield's Kerwin 1, 21-26-22, sd 3650 ft, td 4760 ft.

SANTA BARBARA COUNTY

CARPENTERIA—Continental's Franklin 1, dr shale and sand 3415 ft.

GOLETA—Elwood Consolidated Oil Co.'s Rekar 1, 8-4-29, plugging back to 3020 ft.

ORELLA—Shell's Rutherford 1, 36-5-31, dr shale 350 ft.

POINT ARQUELLO—Standard's Schyvers 1, coring 675 ft.

POINT CONCEPCION — Standard Gerber 1, rig.

SANTA BARBARA—Channell Oil and Development Co.'s 1, 29-4-27, co 6050 ft, td 6300 ft.

SANTA MARIA—Shell's Union Sugar 1, 36-10-35, coring 1300 ft.

SUMMERLAND — Summerland Oil Co.'s Becker 1, 22-4-26, sd 3100 ft.

VENTURA COUNTY

BARDSDALE—Triple A. Investment Co.'s Elkins 1, 28-4-19, sd 3000 ft.

CAMARILLO—American Oil Co.'s 1, 33-2-20, dr rock and shale 722 ft.

CONEJO—Triunfo Oil Co.'s 1, 24-1-19, dr 300 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

FILLMORE—No active tests in this district.

OJAI—Continental's Fox 1-M, 21-4-22, dr shale 3430 ft; Thompson 1-A, 22-4-22, dr shale 4140 ft. E. J. Miley's Casitas 2-A, changing to rotary, td 780 ft.

PIRU—Bolsa Chica Oil Co.'s Hidden 1, 4-4-18, dr 300 ft. Rio Grande Oil Co.'s B. B. N. 1, 13-4-19, co 2150 ft. Pacific Western Oil Co.'s 5, 3-4-28, dr 3222 ft.

SANTA PAULA—W. W. Bryant's 3, 21-4-21, dr brown shale 800 ft.

SATICOY—Standard's Citrus 5, 10-2-22, dr shale 4455 ft.

SIMI—Emma F. Exline's Seaton 1, 32-3-21, fsh for dr pipe 2410 ft. Shell's Marr 1, 31-17- coring shale 1310 ft.

SOUTH MOUNTAIN — Ring Pet. Co.'s Converse 1, 23-3-21, will test at 4840 ft.

VENTURA—Star Pet. Co.'s Canet 1A, 13-3-23, will deepen from 6775 ft.

MISCELLANEOUS

FRESNO COUNTY—Currency Pet. Co.'s 1, 28-21-14, 15½-inch casing cemented 855 ft.

MONTEREY COUNTY—Shell's Dudley 1, 15-22-29, bldg rig.

SAN LUIS OBISPO COUNTY—Panorama Oil Co.'s 1, 7-31-21, dr shale 3565 ft. San Luis Synd.'s 1, 29-31-13, co 3100 ft. Canyon Oil Co.'s 1, 18-31-12, will deepen from 925 ft. Texas Pacific Coal and Oil Co.'s Dutton 1, 25-32-14, dr shale 2222 ft. Union's Russ 1, 34-32-15, sr 3075 ft, td 3180 ft; Chandler 1, 12-32-15, casing parted 2850 ft, fsh.

TULARE COUNTY—Angiole Development Co.'s 1, 27-22-23, dr gray sand 3125 ft. Kings-Tulare Synd.'s Palmer 1, 19-21-23, fsh for liner, td 5775 ft.

MOUNTAIN STATES

MONTANA

BIG HORN—Texas-Montana Prod. Co., 21-6s-35e, td 1100 ft last report.

BROADWATER—Swoboda et al, 1, 36-7n-2e, rigging.

BLAINE—Ohio Oil Co., Winngert 1, 3-34n-32e, dr 2505 ft.

CASCADE—Eden O. & G. Co., 27-18-4e, cem cave 780 ft. U. S. Pete Co., Miller 1, 8-21-4e, sd 946 ft. Lone Star, McLean 1, 13-21n-3e, fsh bailer 785 ft. Rothrock & Reynolds, McIver 1, se 12-21n-2e, sd 200 ft.

CARBON—Ohio Oil Co., Northern Pacific 1, 11-7s-21e, fsh tools 14.8 ft.

CHOTEAU—Geraldine O. & G. Co., ne 1-21-11e, dr 1650 ft. Williston-Shelby O. & G. Co., 1, 12-28-11e, sd 2730 ft, wait special tools to dr by fsh job.

CUSTER—Montana Belle, ne 28-8n-45e, dr 1500 ft.

FERGUS—Melton Corp., sw 20-23-20, set 20-inch at 180 ft, dr 200 ft. Judith Basin Oil Co., 1, 33-19-12e, dr below 2175 ft.

GALLATIN—California Co., Ringling 1, 35-5n-7e, ur 600 ft.

JUDITH BASIN—Gen. Oil Co., 15-16-10e, rig up.

LIBERTY—Sunburst O. & R. Co., Bear's Den 1, nw 17-36-6e, another fsh job 1300 ft. Square Deal Pete, Johnson 1, se 1-32-7e, dr 3230 ft. Mid-Rocky Dev. Co., Federal Lands 1, 7-33-7e, sd 1500 ft. Western Nat. Gas Co., 22-37-4e, dr 2080 ft. Cypress Oil Co., State 1, 36-28-6e, dr 2175 ft.

MUSSELSHELL—Laffea Oil Co., 1, 6-10-25e, lcn.

PONDERA—Trapp Synd., Hover 1, 35-28-22e, will deepen.

STILLWATER—J. S. Stewart, 5-2n-22e, no report.

SWEETGRASS—Shoshone Consolidated 1, 23-2n-15e, more oil show 4040 ft.

TETON—Texas Pacific, 12-22-1w, engine trouble, td 610 ft. Mitchener et al, Mattoon 1, sw 3-23-1w, sd 1710 ft.

WYOMING

BIG HORN—Utah Southern Oil Co., 3, 26-56n-87w, dr out cem plug 3275 ft, td 3763 ft. P. & R. 3, 24-56-98, sd 2708 ft. Prairie O. & G. Co., Chilcote 1, 35-56n-95w, ur to 2580 ft. P. & R. South Frannie 1, 7-57-97, dr 1533 ft.

CARBON—P. & R, 2-19-88, sd 4003 ft. P. & R., O'Brien Springs 7, 12-24-88, dr 289 ft.

FREMONT—P. & R.'s Muskrat 2, nw 1-33n-92w, lcn. Gates & Holman, 6-33-94, spuddingf. Kinney-Coastal 1, 22-3n-1w, rig.

HOT SPRINGS—Texas Prod. Co., sw 23-45n-100w, dr 882 ft.

LINCOLN—Midwest Refining Co., Waterfall 1, 35-22-115, sd 2355 ft.

PARK—California Exploration Co. and P. & R.'s Pitchfork 1, 12-48n-102w, cem 20-inch at 225 .ft Midwest, Rosenburg 36, 25-58-98, stand. 52 ft. Midwest, Kirk 1, se 23-58-98w, dr 1280 ft.

SWEETWATER — Prairie O. & G. Co., Tucker 1, 18-13-99, sd for winter 2480 ft. Ohio Oil Co., Humphreys 1, 2-12-101, dr below 1907 ft.

SUBLETTE—California Co., Wyss 1, 12-32n-115w, dr 1275 ft for fuel. California Co., Buchell 1, 11-29-115, ur 2503 ft.

UNITA—California Co., U. P. 1, 7-17-116w, dr 2369 ft.

UTAH

GRAND COUNTY — Utah Southern, Salt Valley 1, 13-23-21, will resume at 3001 ft. Utah Southern, Shafer 1A, 36-26-20, dr 2620 ft. Navajo Pete Co., 2-29-21, sd 2845 ft. Crescent Oil Synd.'s McCarthy 1, sw 27-21s-19, bldg rig, td 1602 ft. Big Six Oil Co. and Utah Refining Co., Randall 1, 10-22-19, fsh 1710 ft. Brendell Sons, Crescent Eagle 2, 9-22-19, td 100 ft. Signal Pet. Corp., Sandburg 1, 7-21-19, td 2457 ft, rigging up.

DUCHESNE — Utah Southern Oil Co., Farnsworth 1, 29-4-1, dr 2930 ft.

SAN JUAN—Boulder Knoll O. & G. Co., 17-34-25, td 2640 ft. Navajo Pete Co. of Calif., 1, 12-35-24, lcn.

UINTAH—Maude Ellen Oil Co., 1, 28-3s-21e, sd 1450 ft, broken stem.

UTAH—Diamond Oil Co., 3, ne 29-8s-5e, td 1700 ft.

WAYNE—Phillips Pete Corp., 1, 16-27-16, dr 4600 ft.

KANSAS

BARBER COUNTY — Barbara Oil Co.'s Lytle 1, cnl ne ne sw 12-33-13w, dr 1000 ft. Barbara's Blunk 1, c ne nw 20-34-13w, fsh 4755 ft. Rolands et al's Pickens 1, ne nw ne 27-30-14w, sd 4223 ft. Allison & Fitwilliams' Morrise 1, c nw se se 9-30-112w, rig.

BUTLER COUNTY—LaRobb et al's Bronsenger 1, ne se 24-27-3e, ru. Barnsdall's Means 1, nw sw 34-27-2e, show oil 2633-35 ft, dr 2945 ft.

CHASE COUNTY—Grisner & Fowler's Carson 1, ne ne 9-21-7e, sd 3150 ft.

COWLEY COUNTY—Pyle & Sutter's Lindstrum 1, se ne 9-35-4e, dr 2215 ft. Empire-Marland-Twin State's Feaster 1, nw ne 36-32-5e, swabbed 39 bbls oil 10 bbls water 3145-65 ft. Wakefield & Osborne, Osborne 1, nw ne 18-30-5e, ru.

EDWARDS COUNTY — Amerada-Wilcox,

Teansil 1, nw cor 32-35-19w, ur 8-inch csg. British-American Oil Co.'s McCarty 1, ne nw 31-25-17w, spudded and sd.

ELLIS COUNTY—Rush Oil Co.'s Gatewood 1, nw 4-15-20w, sd 1100 ft. Finney & Weimer, Freeman 1, nw se se 24-15-20w, spudded and sd. Empire's Wann 1, ne 31-12-19w, est 250 bbls 3560-64 ft. Marland's Vine 1, sw se 27-11-19w, sd 3805 ft. Transcontinental's Boetcher 1, nw se sw 21-13-19w, fsh 3858 ft. Phillips' Brull 1, c nw 34-14-17w, dr 2130 ft. Phillips' Schmeidler 1, nw cor 20-12-17w, dr 750 ft. Labette Oil Co.'s Urbank 1, ne nw nw 19-15-16w, hfw 3260-64 ft. Cosby et al's Robbins 1, sw nw 15-14-16w, ru. Phillips' Johnson 1, sw ne 9-13-19w, spudded. Derby & Empire's Krause 1, nw sw sw 17-14-19w, td 3829 ft, 150 ft oil. Davis & Hazlett Weiland 1, nec 1-13-18w, dr 2330 ft.

GREENWOOD COUNTY—P. H. Balieu's Bright 1, ne sw 22-27-1e, sd 1210 ft.

HARPER COUNTY—Amerada's Mendiville 1, c se se 24-34-6w, co 5353 ft.

HARVEY COUNTY — Margaret Gay Oil Co.'s Grouse 1, nw ne nw 29-23-1w, dr 250 ft. Helmerick & Payne Lindamood 1, c sw ne sw 2-22-1e, dr 250 ftfl Empire's Tangeman 1, c sw ne ne 19-22-1e, ru. R. F. Garland's Cox 1, ne cor 27-24-1w, dr 2145 ft. Fisher & Lauck's Regier 1, nw ne 17-23-2e, dr 1230 ft. Austin's Neiman 1, swc 21-24-2e, pulled in rig, td 2932 ft.

JEFFERSON COUNTY—Wichita Oil Co.'s Simpson 1, nw sw sw 19-10-17e, ru and sd.

LANE COUNTY—Blankenship Pet. Co.'s Schaeffer 1, nec ne 24-16-28w, spudded and sd.

MARSHALL COUNTY—Irwin et al's Cooper 1, ne nw 10-3-7e, spudded.

MORRIS COUNTY—Hiatt et al's Blythe 1, nw ne 35-15-5e, rig.

McPHERSON COUNTY—McPherson County Gas Co.'s Stein 1, sw ne sw 17-18-1w, dr 3373 ft. McPherson County's Gustafson 1, c ne 9-17-2w, d&a 3597 ft. Ted Washabaugh's Vosshell 1, ne ne 9-21-3w, 8-inch 2150 ft. Lariaux et al's Martinan 1, ne se 9-19-3w, rig. Mid Kansas' Yoder 1, c nw sw 8-20-4w, dr 1918 ft.

NESS COUNTY—Barnsdall's Lauck 1, c sw 35-18-21w, dr 800 ft.

OSBORNE COUNTY—L. D. Jarvis Jellison 1, sec 13-10-15w, dr 300 ft.

OTTAWA COUNTY—Anderson et al's Bank 1, ne nw 28-10-2w, sd 2820 ft.

PAWNEE COUNTY—F. C. Troupe's Lovett 1, cel ne ne 31-21-16w, sd 1560 ft.

PHILLIPS COUNTY—Watsonian Oil Co.'s Marklein 1, ne sw 21-3-19w, dr 5350 ft. Watsonian and British-American's Weinman 1, c sw sw 34-2-19w, timbers.

RICE COUNTY — Allison & Fitzwilliams' Poland 1, ne sw ne 36-19-8w, cellar. Higgins & Steinbuble, Shurr 1, ne sw 21-20-10w, spudded and sd.

RUSH COUNTY—Danciger O. & R. Co.'s Pinonka 1, c ne sw ne 17-19-17w, sd 530 ft. Sinclair's Beiching 1, nw ne nw 9-16-16w, dr 3608 ft. Central Commercial's Brack 1, nec sw sw 12-17-16w, spudded and sd. Phillips' Legleiter 1, c ne nw se 10-16-18w, dr 350 ft.

SALINE COUNTY—M. Esty et al's Peterson 1, c ne 6-16-5w, spudded and sd. Nathan-Jones et al's Robertson 1, nw nw 27-14-2w, sd 2895 ft.

SEDGWICK COUNTY—Magnolia's Wise 1, nwc 36-28-2w, timbers. Buvibar Pet. Co.'s Steel 1, sec 1-26-2w, dr 3570 ft. Barnsdall's Samuels 1, ne nw 24-25-1e, fsh 3053 ft. Barnsdall's Faber 1, sw ne 6-27-1w, sd 3010 ft. Morgan & Tilley's Fitzgerald 1, nw ne 5-26-1w, ru. Van Zandt & Mason's Fox 1, c nw sw 19-25-1w, fsh 3030 ft. Connell Oil Co.'s Cross 1, ne cor 27-25-1w, ur 6-inch 2975 ft. Morgan et al's Corn 1, sw ne 28-25-1w, dr 1405 ft. Kyser et al's Stroot 1, sw nw 28-26-1w, dr 1600 ft. H. H. Patton Ryder 1, nec 22-25-1e, dr 300 ft. Lario & Blair's Tjaden 1, c ne se 22-29-2w, dr 2100 ft. Maglasson's Buckles 1, nw se 3-28-1w, sd. 250 ft. McCulloch et al's John 1, c ne sw ne 24-29-1e, dr 2065 ft. Miller et al's Johns 1, c ne sw ne 24-29-1e, dr 2065 ft. Miller & Wentz's Shaeffer 1, nw ne 9-27-2w, rig. Lewis et al's Taylor 1, nw ne 23-27-2e, dr 1400 ft. Shawer et al's Reeves 1, c se sw se 19-28-1e, spudded and sd. Austin Drlg. Co.'s Stuckey 1, sw nw 17-26-5w, timbers.

SHERMAN COUNTY—A. L. Henson et al's Murray 1, ne se nw 22-7-40w, sd 3035 ft.

SMITH COUNTY—Mid-Kansas's Blank 1, nec 4-2s-13w, dr 1025 ft.

STEPHENS COUNTY—W. Sidwell et al's Kelly 1, sw ne 16-34-38w, sd 1160 ft. Trees Oil Co.'s Unknown 1, sw ne sw 3-35-38w, skid rig. McKenna et al's Hamm 1, se ne 10-33-38w, dr 1510 ft.

SUMNER COUNTY—Williams 1, nw se sw 16-35-3w, fsh 4400 ft. McCulloch et al's Tuttle 1, sw ne 29-34-1w, dr 4479 ft. Davidson et al's Strickland 1, sw se 12-35-1w, rig.

TREGO COUNTY—Central Commercial Oil Co.'s Ellis 1, ne sw ne 20-13-21w, dr 3180 ft.

WASHINGTON COUNTY—McCool & Vincent's Linn 1, nw ne 27-4-3e, ru.

OKLAHOMA

WOODS COUNTY—T 28n, R 18w, Sec. 11, Geo. Vincent et al's Freedom 1, c sw, ponds for deep test.

GRANT COUNTY—T 28n, R 3w, Sec. 24, Lario O. & G. Co. et al's Conneil 1, nwc, dr 1975 ft.

HARPER COUNTY—T 27n, R 21w, Sec. 24, A. F. Kopisch' No. 1 Selman, nec se, spudded and sd.

WOODS COUNTY—T 27n, R 16w, Sec. 23, Sinclair's Share 1, c ne sw, rig. T 27n, R 15w, Sec. 20, Sooner State Oil Co. & E. R. Black's Marcum 1, c sw spudded and sd.

GRANT COUNTY—T 26n, R 4w, Sec. 34, Sooner State Oil Co.'s Royce 1, swc nw, sd 550 ft.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent & Nat'l Union's McNeal 1, nw cor ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 22w, Sec. 14, Hoffer Oil Co.'s Cooper 1, nwc se, sd 4182 ft, blk in litigation.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu Vi Bar et al's 1, sec sw, dr 1530 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden's Vollner 2, nec ne sw, lost tools 5640 ft, sd.

CIMMARON COUNTY—T 5n, R 5e, Sec. 22, Magnolia's School Land 1, c se ne, spud 40 ft.

TEXAS COUNTY—T 1n, R 18e, Sec. 11, Three Way Oil Co.'s Price 1, sec nw, sd 3490 ft.

WOODWARD COUNTY—T 24n, R 17w, Sec. 32, Otstot Dev. Co.'s Simmons 1, sec, sd 1500 ft.

WOODS COUNTY—T 24n, R 13w, Sec. 18, Miller and others Copenhaver 1, nwc spudded and sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, Washoma Oil Co.'s Acre 1, swc ne, rig.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer's White 1, sec nw, sd 4755 ft.

WOODWARD COUNTY—T 23n, R 20w, Sec. 9, Billy Oil Co.'s Wyatt 1, c se, dr 1800 ft.

MAJOR COUNTY—T 23n, R 16w, Sec. 4, Wilson et al's 1, nec sw rig.

WOODWARD COUNTY—T 24n, R 19w, Sec. 15, Burgoyne Bros.' 1, swc se ne, sd 1950 ft. T 21n, R 21w, Sec. 25, Sharon's Elmore 1, swc, sd 3025 ft, rig down.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Keller et al's Horton 1, c ne ne, spudded and sd.

GARFIELD COUNTY—T 20n, R 4w, Sec. 9, Marland's Looman 1, nec se, sd 5735 ft, csg parted. Sec. 12, Marland's Miller 1, swc, sd 4586 ft.

DEWEY COUNTY—T 18n, R 15w, Sec. 9, Huckleby & McCoy's Perfect 1, nec, fsh 4395 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Haley & Consolidated Drlg. Co.'s Quier 1, sec sw, 3970 ft sd.

KINGFISHER COUNTY — T 16n, R 6w, Sec. 27, Crawford & McKenna's Sturgeon 1, sec sw, sd 4846 ft.

BLAINE COUNTY—T 15n, R 12w, Sec. 26, W. J. Donley's Dickens 1, sec nw, dr 4420 ft.

CANADIAN COUNTY—T 14n, R 6w, Sec. 9, A. D. Spears' Piatt 1, sec ne, sd 3223 ft. T 13n, R 10w, Sec. 18, Wirt Franklin & I. T. I. O.'s North 1, c ne ne, dr 2180 ft.

OKLAHOMA COUNTY—T 13n, R 3w, Sec. 18, Slick & Bailey's Lufkin 1, c ne se, dr 4814 ft. T 12n, R 3w, Sec. 15, Cromwell et al's Thompson 1, sec ne ne, dr 7124 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw, sd after spudding.

OSAGE COUNTY—T 22n, R 8e, Sec. 8, Harry McGill's 1, swc se, dr 2663 ft.

PAWNEE COUNTY—T 22n, R 5e, Sec. 33, Washoma Oil Co.'s Buffalo 1, sec nw, td 3812 ft, pb to 3200 ft.

LINCOLN COUNTY—T 16n, R 4e, Sec. 15, J. V. Bailey et al's House 1, c ne se, co 3385 ft. T 16n, R 5e, Sec. 2, L. C. Wheeler and W. K. Mote et al's Wolfe 1, nwc ne sw, dr 100 ft. T 16n, R 6e, Sec. 19, Flynn & Morgan's Finely 1, swc, lcn. T 15n, R 6e, Sec. 23, Shaffer O&R Co. et al's Pinkston 1, ne csw, sd 4222 ft, water. T 12n, R 3e, Sec. 29, Phillips' Roberson 1, sec nw, rig.

OKFUSKEE COUNTY—T 12n, R 9e, Sec. 30, Tidal Oil Co.'s Barnett 1, sec ne ne, sand 3935-48 ft, show gas.

MUSKOGEE COUNTY—T 13n, R 18e, Sec. 33, L. T. Haynie's Linder 1, c se, sd 2307 ft.

McINTOSH COUNTY—T 12n, R 18e, Sec. 15, A. B. Wolfe et al's Beck 1, nwc se, spudded and sd.

PITTSBURGH COUNTY—T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, swc nw se, Wilcox 5443-65 ft, dr 5467 ft.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion Oil Co.'s Sanders 1, nwc ne sw, sd 1800 ft.

LATIMER COUNTY—T 5n, R 18e, Sec. 15, Limestone O&G Co.'s Murray 1, swc 1½M gas 2518-22 ft, resetting csg.

SEMINOLE COUNTY—T 11n, R 6e, Sec. 27, Fuhrman's Fay 1, sec nw sw, 4773 ft hfw sd.

OKFUSKEE COUNTY—T 11n, R 7e, Sec. 21, T. B. Slick's Wolfe 1, sec ne se, cemt 8-inch 3900 ft.

SEMINOLE COUNTY—T 11n, R 7e, Sec. 34, Phillips' Mills 1, nwc sw, dr 3450 ft.

CLEVELAND COUNTY—T 10n, R 2w, Sec. 8, Slick and Phillips' Sudik 1, c ne ne, dr 3755 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 16, McCuloch et al's Lincoln 1, sec nw, lcn. T 10n, R 7e, Sec. 5, Marland Oil Co.'s Strothers 1, nwc se ne, fsh 3550 ft.

POTTAWATOMIE COUNTY—T 9n, R 5e, Sec. 30, Magnolia Pet. Co.'s Germany 1, sec nw, td 4419 ft hfw, pb 4212 ft, testing. T 8n, R 2e, Sec. 24, Superior Oil Corp.'s Jones 1, swc nw ne, cemtg 8-inch 4926 ft. T 8n, R 3e, Sec. 12, T. B. Slick's Nix 1, sec nw nw, dr 3936 ft.

SEMINOLE COUNTY—T 8n, R 8e, Sec. 4, McCulloch's McGilbray 1, swc ne, ur 10-inch csg 1940 ft, hfw.

CLEVELAND COUNTY—T 7n, R 1w, Sec. 15, Sooner State Oil Co.'s Vandeveer, nec nw sw, sd 3120 ft.

POTTAWATOMIE COUNTY—T 7n, R 2e, Sec. 17, T. B. Slick's Spangler 1, nwc se nw nw, fsh 6098 ft. T 6n, R 4e, Sec. 19, Rush & Baughm's Laster 1, sec ne ne, bldg rig.

McCLAIN COUNTY—T 5n, R 3e, Sec. 22, Mid Cont. Pet. Corp.'s 1, sec, lcn. T 5n, R 3e, Sec. 29, Empire's Bonner 1, sec nw nw, lowering 6-inch 4400 ft.

PONTOTOC COUNTY—T 5n, R 4e, Sec. 36, Denver P&R's Roberts 1, sec ne ne, dr 350 ft.

SEMINOLE COUNTY—T 5n, R 6e, Sec. 11, Slick's Harjo 1, nwc ne, td 3950 ft, hfw.

HUGHES COUNTY—T 5n, R 9e, Sec. 17, E. W. Whitney's Huddleston 1, sec sw, ur 6-in. 3345 ft.

PONTOTOC COUNTY—T 4n, R 8e, Sec. 23, Independent's Hampton 1, nec se, rigging up rotary.

PITTSBURG COUNTY—T 4n, R 12e, Sec. 32, Kerr & Key's Rall 1, c nw nw, dr '0 ft.

COAL COUNTY—T 2n, R 8e, Sec. 6, F. T. Hepburn's Richardson 1, c ne ne, lcn.

MURRAY COUNTY—T 1n, R 2e, Sec. 17, Revels & McGee's Wolfe 1, nwc, sd 1850 ft.

GARVIN COUNTY—T 1n, R 3e, Sec. 32, Ramsey's Malickey 1, c se ne, rig.

COAL COUNTY—T 1n, R 9e, Sec. 24 Galbreath et al's Jones 1, swc se, sd 3270 ft.

CUSTER COUNTY—T 14n, R 14w, Sec. 1, W. E. Witt's Wellman 1, c se, sd 100 ft.

ROGER MILLS COUNTY—T 11n, R 26w, Sec. 4, L. C. Hivick's Davis 1, c nw ne, sd 700 ft.

BECKHAM COUNTY—T 8n, R 25w, Sec. 1, C. L. Martin's Daly 1, c nw se, td 2547 ft, co. T 8n, R 22w, Sec. 20, Carson et al's Denby 1, swc se ne, sd 885 ft for csg. T 8n, R 21w, Sec. 33, Day Oil Co.'s Ault 1, c nw nw, co 1490 ft.

KIOWA COUNTY—T 7n, R 17w, Sec. 34, G. B. Cloyes' Bristle 1, swc ne, dr 690 ft. T 7n, R 15w, Sec. 36, David Malernee's Van Kirkland 1, nwc, sd 858 ft. flowing sulphur water. T 6n, R 15w, Sec. 6, Johnson-McDowell

1, c sw ne, td 2700 ft. T 6n, R 14w, Sec. 32, Russell & Sloan's Madden 1, nec sw sw, dr 550 ft.

CADDO COUNTY—T 6n, R 12w, Sec. 29, W. J. Hartley's Galbreth 1, sec nw se, owdd, sd 3394 ft.

COMANCHE COUNTY — T 4n, R 11w, Sec. 2, Wirt Franklin Pet. Corp.'s Hollow 1, nwc, dr 3120 ft.

JACKSON COUNTY—T 1n, R 20w, Sec. 4, Houseman et al's Northington 1, nec, sd 2020 ft.

KIOWA COUNTY—T 1n, R 17w, Sec. 13, Allen Bros.' Howell 1, nwc se, sd 535 ft.

STEPHENS COUNTY—T 1n, R 7w, Sec. 2, Stahl & Burris, Jefferson 1, sec ne nw, 2624 ft running 6-inch.

COTTON COUNTY—T 1s, R 11w, Sec. 34, Shasta Oil Co.'s Indian 1, nec. lcn.

STEPHENS COUNTY—T 1s, R 7w, Sec. 12, Ilsing, Russell & Nance's Houston 1, nec sw sw, dr 2330 ft.

KIOWA COUNTY—T 2s, R 16w, Sec. 6, Landfair's 1, sec sw se, dr 2535 ft.

COTTON COUNTY—T 2s, R 12w, Sec. 31, Pearce & Brown's Heitzler 1, sec nw, rigging rotary.

TILLMAN COUNTY—T 3s, R 18w, Sec. 29, Dixie Oil Co.'s Harrison 1, nec nw, dr 2210 ft.

COTTON COUNTY—T 3s, R 10w, Sec. 11, E. J. Stumpf's Jones 1, nwc ne, lcn.

STEPHENS COUNTY—T 3s, R 6w, Sec. 26, E. J. Stumpf's Simmons 1, swc, rig.

COTTON COUNTY—T 4s, R 12w, Sec. 16, Guiler & Dyson's Thomas 1, sec sw, sd 2127 ft.

JOHNSTON COUNTY—T 1s, R 7e, Sec. 29, Smitty-Kinsley's Lane 1, sec nw, sd 1306 ft.

CARTER COUNTY—T 4s, R 2e, Sec. 32, Tex-Okla. Drlg Co.'s Anderson 1, sec ne se, 300 ft sd. T 5s, R 3w, Sec. 19, Devonian Oil Co.'s Myer 1, nwc se, dr 1925 ft.

BRYAN COUNTY—T 9s, R 9e, Sec. 36, W. J. Endicott's Craig 1, c nw ne, dr 835 ft.

NORTH LOUISIANA

Completions

BIENVILLE PARISH—		
W. P. Wallace, Ashley 1, 15-16-10...	¶8	2005
OUACHITA PARISH—		
G. E. Jordan, C. J. Wall 1, 12-18-3e, wo, td 3347 ft.....	¶½	2300
WEBSTER PARISH—		
Northwest La. Gas Co., Pinewoods Lbr. Co. 9, 37-23-11.....	*	3100

BIENVILLE PARISH — W. P. Wallace's Ashley 1, 15-16-10, 8,000,000 ft gas, td 2005 ft; State 1, 16-16-10, rig up.

BOSSIER PARISH—Ark. Nat. Gas Corp.'s Tidwell 1, 29-22-11, fsh bit, td 2508 ft. Big Ben Oil Co.'s Stewart 2, 15-18-12, sd 1300 ft. Nell & Lanier's Biedenharm 1, 23-21-14, sd 50 ft. Walker et al's Antrim 1, 28-22-14, sd 2985 ft. John F. Woodman's Bolinger 1, 9-22-11, dk. Magnolia Pet. Co.'s B. M. Cook 1, 2-22-11, lcn. Sallie Coyle 1, 2-22-11, lcn.

CADDO PARISH—D. C. R. Oil Co.'s Hunter Estate 1, 17-19-14, dr 1500 ft.

CATAHOULA PARISH—Lochnager O. & G. & G. Co.'s Taliaferro 1, 26-9-6e, sd 900 ft.

CLAIBORNE PARISH — Dixie Oil Co.'s Gilbert 1, 27-21-5w, dr shale 4900 ft. El Dorado Chief Oil Co.'s Baker 1, 26-20-7, sd 2092 ft. Smitherman & McDonald's Miller 1, 17-23-8, sd anhydrites, td 4275 ft.

DE SOTO PARISH — Benedum & Trees' Nicholson 1, 2-15-14, dk. P. J. Becker's Tull 1, 23-12-15, dk. Benedum & Trees' State 1, 22-14-12, sd fuel td 2930 ft. Benson O&G Co.'s Jackson 1, 3-10-13, rig up. Luke Case, Tr.'s Boatright 1, 3-10-13, sd rebldg dk td 1810 ft. Carlton Drilling Co.'s Stephens 2, 12-11-16, cemented 6⅝-inch casing 1110 ft, td 1178 ft. R. O. Roy's Sample 1, 1-13-14, dr 550 ft. Thorn Oil Co.'s Burford 1, 22-14-14, dr 2620 ft. Warren & Carruthers' Ramsey 1, 33-13-16, dr 2760 ft.

EAST CARROLL PARISH—Palmer Corp.'s Mitchiner 1, 8-19-11e, tested sw 2405 ft, dr 2448 ft.

FRANKLIN PARISH—Davis et al's Moore 1, 12-11-6e, dr 1185 ft.

LINCOLN PARISH—V. E. Shaw's Voss 1, 1-20-3w, rig up.

MADISON PARISH — Mid-American Pet. Co.'s Yerger 2, 51-16-14e, sd 285 ft.

MOREHOUSE PARISH—Rainbow Oil Co.'s Louisville Cooperage 1, 33-22-8e, dk. Woodley & Collins' Harp 1, 22-22-7e, rig up.

NATCHITOCHES PARISH — Robeline O. & G. Co.'s Cassady 1, 7-8-9w, dr 2190 ft.

OUACHITA PARISH—G. E. Jordan's C. J. Wall 1, 12-18-3e, re-test compl. 500,000 ft gas 2300 ft, td 3347 ft. Ouachita Nat. Gas Co.'s D'Arbonne B-2, 25-19-2e, sd 3349 ft. Phillips et al's School Fee 1, 16-16-4e, sd 3300 ft.

RAPIDES PARISH — G. E. Silbertson's Willemach 3, 13-5n-4w, sd 2250 ft. Glenmora Pet. Co.'s Fee 1, 1-2n-2w, sd 3850 ft.

RICHLAND PARISH—Richland Operating Co.'s Chapman 1, 19-16-7e, cemtd 6-inch csg, td 2272 ft. S. C. Wilson's Buie 1, 17-15-7e, sd 50 ft.

SABINE PARISH—W. J. Garnier's Bowman-Hicks 1, 16-7-12, sd wo 625 ft. R. L. Gay, Tr.'s, Sabine Lbr. Co. 1, 13-7-14, cemtd 8¼-inch csg 2080 ft, td 2133 ft. Bowman-Hicks 2, 14-7-14, dr 1200 ft.

TENSAS PARISH—Enochs et al's Curry 1, 39-11-12e, sd 3583 ft.

UNION PARISH—G. E. Carmatte's Tugwell 2, 21-22-1e, dr 1700 ft. Carter & Wingfield's Clark A-3, 8-23-1e, dk. Hudson 2, 7-23-1e, sd wo 2278 ft. Hudson 3, 7-23-1e, sd wo 2278 ft. Security Trust 2, 7-23-1e, lcn. H. C. McDonald's Union Sawmill 2, 18-23-1e, sd wo 1500 ft.

WEBSTER PARISH—Jones et al's Elkins 1, 33-23-9, temp abn 2690 ft. Magnolia Pet. Co.'s H. H. Branton 3, 6-22-9, dr 517 ft. Denman 1, 1-22-11, dr 2066 ft. Harry Morris' Lewis 1, 15-23-9, sd wo 2902 ft. John F. Woodman's Boyd 1, 3-22-11, dk pat. Northwest La. Gas Co.'s Pinewoods Lbr. Co. 9, 37-23-11, sw abn td 3100 ft.

ARKANSAS

Completion

OUACHITA COUNTY—		
Little Fay Oil Co., Cannada 1, 24-15-16	15	2058

ASHLEY COUNTY—Texas Co.'s Keiffer 1, 11-18-4, trying to set 12½-inch csg 450 ft.

BRADLEY COUNTY—Ohio Oil Co.'s Sou. Lbr. Co. 2, 19-16-9, dr 2970 ft.

CALHOUN COUNTY — Joe Hurley's Ark. Land & Timber 1, 29-16-12, cmted 6⅝-inch csg 2303 ft, td 2314 ft.

CLARK COUNTY—Wm. Henry, Tr.'s, Clark 1, 34-9-21, sd 1385 ft.

CHICOT COUNTY—W. S. Smith's Meyer 1, 14-19-2, sd 850 ft. Joe Crawford's Cashion 1, 14-18-2, ds stuck, td 2330 ft.

COLUMBIA COUNTY—G. W. Dawley et al's Fullenwider & Kitchen 1, 12-17-22, sd wo 2847 ft.

DALLAS COUNTY — Robt. H. Dedman's Hillman 1, 20-10-13, temp abn, td 1145 ft.

DREW COUNTY—Ohio Oil Co.'s Jerome Lbr. Co. 1, 13-15-4, bldg dk and moving in rig.

FAULKNER COUNTY—Gold Creek O&G Co.'s Stermer 1, 17-4-13, temp abn, td 3462 ft.

FRANKLIN COUNTY — Ozark Nat. Gas Co.'s McElroy 1, 15-8-27, lcn.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-13-19w, fsh cable tools td 2800 ft.

JOHNSON COUNTY — Ark. Nat. Gas

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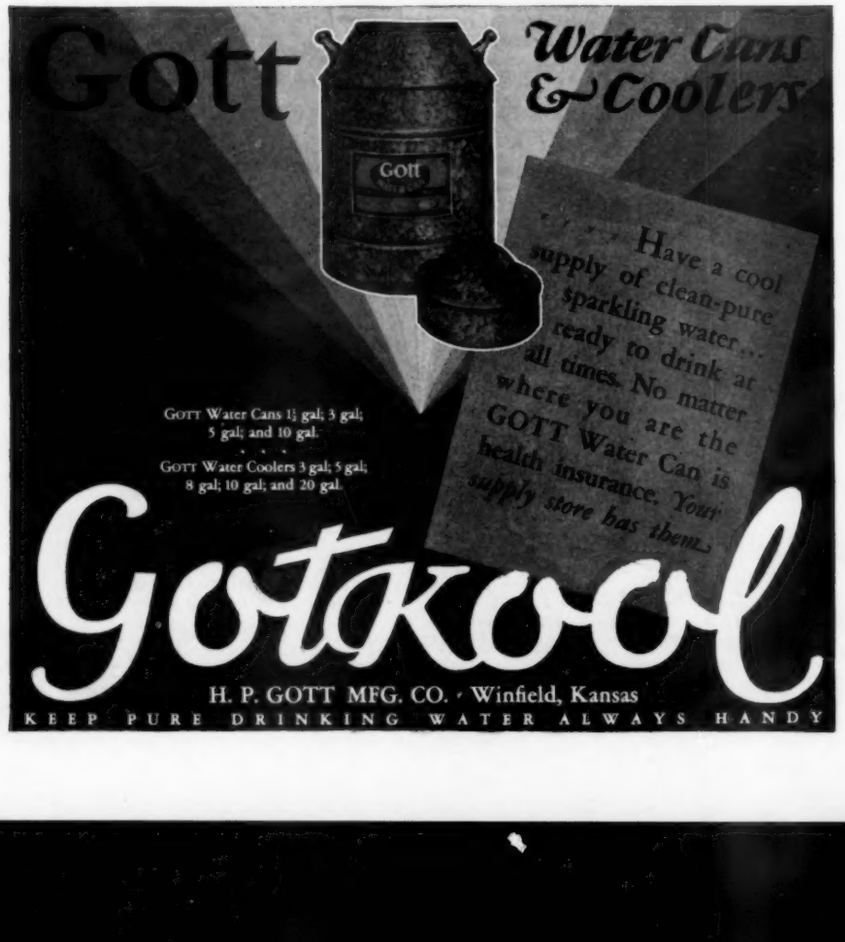
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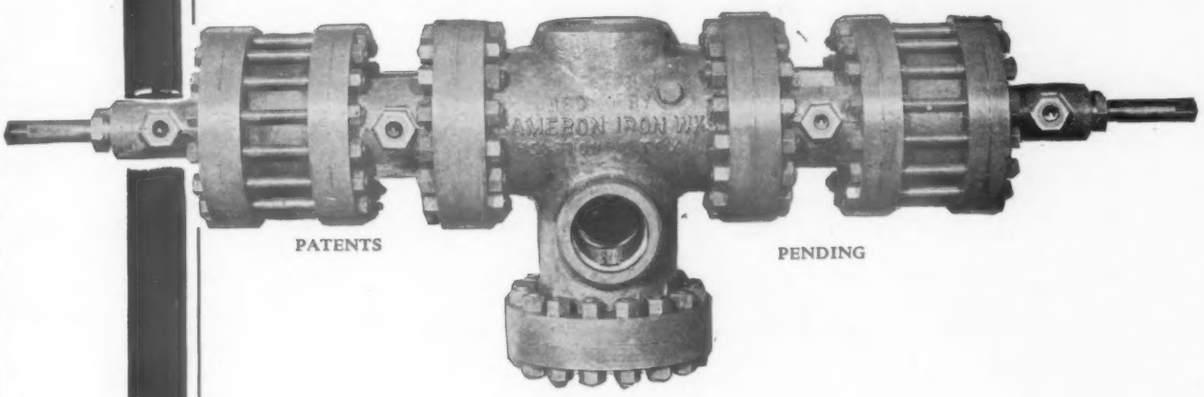

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CAMERON IRON WORKS

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HOUSTON, TEXAS

Corp.'s Bynum 2, 12-10-24, set 12½-inch csg 260 ft. McPherson 1, 10-10-24, dr 1305 ft.

LOGAN COUNTY—Ark. Nat. Gas Corp.'s W. H. Parks 1, 26-8-24, cemtd 6⅝-inch csg td 3208 ft.

MILLER COUNTY — E. A. Martin, Tr.'s Dale 4, 23-15-26, dr 2750 ft.

OUACHITA COUNTY— Chas. McDonald's Wilson 1, 25-15-18, rig up. McDonald Bros.' Wilson 1, 25-15-18, fsh 15 joints 4 inch ds, td 2806 ft. Little Fay Oil Co.'s Cannada 1, 24-15-16, pumping 15 bbls 38 ft br formation, td 2058 ft. Cannada 2, cemtd 6⅝-inch csg, td 2061 ft. Primm A-1, 24-15-16, rig up. Flourcher et al's Bucks 1, 7-15-17, dk pat.

UNION COUNTY — Frank Foster et al's McDonald 1, 11-17-18, dk pat. J. O. Moore, Tr.'s Union Sawmill Co. 1, 11-18-12, lcn. Carter Bell et al's Terrell 1, 27-18-14, dr 775 ft. J. P. Hawkins et al's Goodwin 1, 6-17-15, repairing rig, td 1085 ft. Tharpe Drilling Co.'s List 1, 25-17-15, sd 3050 ft. Foster et al's Murphy Land Co. 1, 22-17-17, cemtd 10-inch csg 204 ft. Calgo Oil Co.'s Primm 1, 9-18-17, tested dry through ds 3656-61 ft, dr 3766 ft, gummy shale. Sam Sklar, Tr.'s, Fitzgerald 10, 8-18-15, set liner 2190 ft, 48 ft br sand, arr to pump. McDonald Bros.' Mayfield 1, 29-19-15, sd 1990 ft. Frazier et al's Laney 1, 30-19-16, dk pat. Grimes Bros.' Hill 2, 7-18-14, rig up. J. C. Marcum's De Yambert 1, 5-19-4, dr 2680 ft. Gulf Ref. Co.'s Gaddy 2, 30-17-14, dr 1590 ft. T. J. Woodley 1, 6-18-14, coring 3318 ft.

EAST TEXAS

Completions

BOGGY CREEK—		
Humble, Callier 1	*	3851
Humble, Weinberg 4	*	3983
Coleman 1	*	3673
W. T. Todd 1	*	3248
Holloway 2	*	4246
CHEROKEE COUNTY—		
Woodley & Nichols et al, J. T. Kennedy 1, W. M. Brewer sur	*	4339

ANDERSON COUNTY—Humble's A. E. Todd B-1, Boggy Creek, bailing, td 3595 ft; Callier 1 abn at 3751 ft; Neches River 1, Boggy Creek, bldg drk foundation; Lizzie Smith 3, Boggy Creek, dr 2535 ft shale; C. W. Hurd, Boggy Creek, dr 1847 ft shale; Earl & Ragsdale 4, Boggy Creek, ru; T. H. Jones B-1, Boggy Creek, moving in boilers.

BOWIE COUNT—Hooks O. & G. Co.'s Rosenberg 1, King sur, temp abn 3086 ft.

CAMP COUNTY—Rogers et al's Enfelt 1, Montgomery sur, sd wo 1978 ft.

CASS COUNTY—Davis & Pigg's Ed Lambert 1, Lambert sur, sd wo 1952 ft.

RED RIVER COUNTY—D. M. Buffington's Hoosier 1, Hughart sur, dr 1520 ft. Shad Harper's Garland 1, Jos. Wagley sur, trying set 6⅝-in cas with pck to test gas show, td 1776 ft. Johnson Pet. Co.'s Randolph 1, Dean sur, sd wo 1440 ft.

SHELBY COUNTY—Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd wo 3004 ft. Gulf Ref. Co.'s Caraway 1, Patterson sur, dr 1893 ft.

TEXAS GULF COAST

Completions

FORT BEND COUNTY—		
J. H. Diehl, Armstrong 1, 2 mi e Boling	*	530
LONG POINT—		
Gulf, Trone 10, Long Point	*	730
Wolf 13, Long Point	*	665
JACKSON COUNTY—		
Douglas & Lawrence, Lawrence 1, Edna	*	3020
JEFFERSON COUNTY—		
So. Spindle Top O. & Dev. Co., 1 mi w Nederland	*	3425
REFUGIO COUNTY—		
Saxet Oil Co., Clint Heard 5, Refugio	gas	3715

AUSTIN COUNTY—Humble's Hardy 2, Raccon Bend, dr 2992 ft, shell and shale; A. Grawunder C-1, Raccoon Bend, dr 3050 ft, shale; Sherrill 1, Raccoon Bend, ru; R. Dietrich 2, Raccoon Bend, ru; Walton 2, Raccoon Bend, dr 2697 ft shale and liem; Urban 2, Raccoon Bend, driving piling in crater; Urban 3, Raccoon Bend, dr 603 ft, hard sand; Roy Thompson 3, Raccoon Bend, drk; J. W. Wilson 1, Raccoon Bend, dr 156 ft, shale; E. Kearns 2, Raccoon Band, dr 186 ft, shale; E. B. Wilson 2, Raccoon Bend, dr 1105 ft, sandy shale; E. Ueckert 1, Raccoon Bend, set cas at 54 ft. H. D. Brown's Brazos River 1, lcn.

BRAZORIA COUNTY—Shell Pet. Corp.'s Allen 5, Allen Dome, set 9⅝ cas at 4400 ft; Reese 3, Allen Dome, dr 3167 ft, hard sand; Randon 1, Allen dome, flowing 25 bbls, 13 bbls net oil, through ⅜-inch choke from 5033 ft. Empire G. & F. Co.'s Brock 2, dr 2485 ft shale. F. A. Bartlett's Dannenbaum 8, Stratton Ridge, sd 3145 ft.

CALHOUN COUNTY—Baker & Thompson's Thomas 1, 9 mi w Pt. Lavaca, td 2390 ft.

CHAMBERS COUNTY—Pure Oil Co.'s Mayes 1, Lost Lake, dr 825 ft, sand rock; Lost Lake 2, Lost Lake, dr 2930 ft, gbo. Yount-Lee Oil Co.'s Chambers Co. 1, Barbers Hill, sd 5315 ft; Richardson 3, Barbers Hill, prep to pump; Richardson 3, lcn. Gulf's Wilborn 1, Anahuac, dr 3662 ft sand. Mills Bennett Prod. Co.'s Kirby 2, Barbers Hill, pulling liner to deepen; Smith 2, Barbers Hill, drk. Mills Bennett and Republic Prod. Co.'s J. B. Means 1, Barbers Hill, dr 2312 ft, sand and shale. Humphreys Corp.'s Kirby C-1, Barbers Hill, flowing 1375 bbls; Barber 1, Barbers Hill, dr 4438 ft sand and lime; Kirby B-6, Barbers Hill, coring at 5402 ft. Mike Kouri's Shaw 1, Barbers Hill, ru.

COLORADO COUNTY—Rich Oil Corp.'s Brun 1, 3 mi ne Columbus, sd 1215 ft. The Texas Co.'s Kveton 1, Cat Springs, dr 865 ft, sandy shale. Humble's Byers 1, Altair, dr 675 ft. Shell's Neverdorff 1, Bernado, lcn.

FAYETTE COUNTY—Phalen et al's Cervanca 1, 6 mi s La Grange, dr 3200 ft shale. Merritt et al's Zvereck 1, 2 mi e Ellinger, lcn. Moore et al's Kerr 1, Muldoon, sd 2078 ft. National Oil Co.'s Melcher 1, near Plum, dr 340 ft, gbo.

FORT BEND COUNTY—Sun Oil Co.'s E. C. Farmer 4, Boling, dr 3500 ft sand; Kasparek 4, Boling, dr 1625 ft gbo. The Texas Co.'s Dippel B-1, Boling, ru; Dippel A-1, Boling, dr 3002 ft, gbo; Pleasants 1, Boling, sd; E. C. Farmer 2, Boling, ru. Gulf's Moore 18, Moore's field, dr 1040 ft, gbo and lime; Trone 10, Long Point, abn 930 ft, gypsum; L. Wolf 13, Long Point, abn 665 ft. Fort Bend Oil Co.'s Moore 1, Orchard. Boling Dome Oil Corp.'s Armstrong 1, Boling, coring and dr hard gumbo at 3820 ft. Humble's Brazos Farm 2, Sugarland, bldg drk; Brazos Farm 3, moving in rig; Brazos Farm 4, moving in derrick; Sugarland Industries 5, Sugarland, ru; Deathridge 2, Sugarland, dr 3001 ft gbo and lime; Nelson 1, Sugarland, dr 3442 ft, sandy shale; Camp 2, Sugarland, dr 1275 ft, sand and boulders. J. H. Diehl's Armstrong 1, 2 mi e Boling, abn at 530 ft. South Texas Explo. Co.'s Hartfield 1, Needville, prep to set 6⅝-inch cas over oil-show in sand at 4975-92 ft.

GALVESTON COUNTY—Long et al's Irvin & Bishop 1, 2 mi s Dickinson, sd 4332 ft. Republic Prod. Co.'s Lobit 1, 1 mi nw Dickinson, sd 3815 ft.

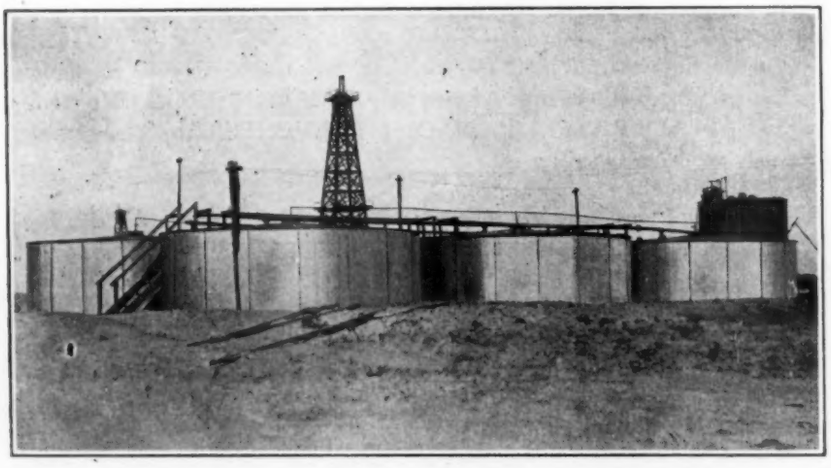
GOLIAD COUNTY—Booth & McCarson's Murry 1, lcn. Southern Crude's J. L. Pettus 1, 10 mi nw Goliad, dr 3760 ft, shale.

HARDIN COUNTY—Guedry Drlg. Co.'s Guedry 1, 3 mi s Batson, drk. Gaddy Oil Co.'s Sternberg 1, dr 1450 ft gbo.

HARRIS COUNTY—Torsen et al's Stewart 1, 4 mi sw Genoa, sd 691 ft. Hunt et al's Lobit 1, 4 mi n Goose Creek, sd 2145 ft. Humble's Warren 5, Hockley, dr 1568 ft, gbo; Minnetex 1, Mykawa, dr 5271 ft, sand; Simms-Smith 74, Humble, dr 6854 ft, sticky shale. Cedar Bayou Oil Co.'s Johnson 1, 8 mi n Goose Creek, sd 4650 ft. Paxton et al's Brubacker 1, 1 mi ne Clodine, sd 1125 ft. South Texas Pet. Co.'s Hicks-Higbee 1, Almeda, dr 1565 ft, gbo; R. B. Morris 3, Humble, dr 1255 ft. The Texas Co.'s House 22, Humble, dr 3790 ft, shale and sand. Baldwin & Leyland's Kitzman 1, 2 mi n Cypress, dr 3175 ft. Brains et al's Lentze 1, 4 mi s Tom Ball, sd 1120 ft.

JACKSON COUNTY — The Texas Co.'s Moore 1, Edna, dr 3091 ft, shale. Wright Bros.' Classen 2, Edna, dr 3500 ft, rock. Douglas & Lawrence's Lawrence 1, Edna, abn at 3020 ft.

JEFFERSON COUNTY—Deep Test Oil Corp.'s Faith McFaddin 1, mi e Spindle Top, dr 3432 ft, gbo. So. Spindle Top O. & Dev. Co.'s Young 1, 1 mi w Nederland, abn at 3425 ft. J. W. Farhar et al's Rohwedder 1, 5 mi ne Beaumont, dr 1775 ft, sand. Beaumont Oil Co.'s Tyrrell 1, 2 mi w Breeks, drk. Westbury Synd.'s West 1, 1 mi ne Westbury, sd 2625 ft. Gulf's Burrell et al 2, Fannette, flowing 1000 bbls, 10 per cent. water. River Oil Co.'s Ship Channel



VAPOR TIGHT MALONEYS

Illustrated above are six 500-barrel, low-type MALONEYS and one special 500-barrel MALONEY flow tank on the Cockrell Ranch of the White & Lane Oil Co., Pampa, Texas, by distributor Maloney Sales Corporation.

MADE OF KEYSTONE COPPER STEEL

THE MALONEY TANK MFG. CO.
Tulsa, Okla., U. S. A.
Distributors at All Principal Petroleum Points

MADE OF KEYSTONE COPPER STEEL

Sizes: 12 to 10,000 Barrels — Packed in Steel-Bound Crates for Export.

MALONEY

Land Co. 1, 2 mi se Beaumont, sd 632 ft. Bleakie Oil Co.'s Tollivar 1, 2 mi northeast Westbury, dr 1190 ft gbo. The Texas Co.'s Pipkin & Davis 1, Big Hill, dr 3600 ft sand and shale.

LAVACA COUNTY—The Texas Co.'s Russick 1, 6 mi s Ezell, dr 1367 ft, shale.

LIBERTY COUNTY—Barlow et al's Hinchcliff 1, 2½ mi ne Cleveland, sd 2215 ft. Kouri et al's Campbell 1, 6 mi s Cleveland, sd 2000 ft. Big Dome Interests' Finley 2, 3 mi nw Hardin, drk; The Texas Co.'s Davis 2, Davis Hill, ru. Humble's Sterling 3, Moss Bluff, dr 3023 ft, anhydrite. Sun Oil Co.'s Koveleika 1, N. Dayton, set 6⅝-inch cas at 4388 ft, td 4460 ft. sand and shale with show of oil. Union Explo. Co.'s Esperson 1, 5 mi s Dayton, ru.

MATAGORDA COUNTY—Rycade's Hudson-Humble 4, Markham, dr 2747 ft, sandy shale and lime. Crossland et al's Hawkins 1, Shepherd's Mott, prep to test gas show at 2630 ft. Dr. P. S. Griffith's Culver 1, e Citrus Grove, sd 3215 ft. Baer 1, 1½ mi n Gulf Hill, sd 1900 ft. The Texas Co.'s Kuhn 1, Pt. Neches, ru.

ORANGE COUNTY—Veteran Oil Co.'s Reed 1, 2 mi se Orange field, sd 2072 ft. The Texas Co.'s Kuhn 1, 3 mi n Pt. Neches, ru.

REFUGIO COUNTY—Blanco Oil Co.'s St. John 1, 3 mi nw Refugio, dr 2250 ft shale. Davidson Horn's Howard 1, 3 mi sw Refugio, sd 1960 ft. Magnolia's Glenwinckle 1, dr 2300 ft, shale. Saxet Oil Co.'s Clint Heard 5, completed making gas and some oil.

VICTORIA COUNTY—Humble's Kahutek 1, 1½ mi ne Nursery, td 603 ft.

WALLER COUNTY—Dixie Oil & Gas Co.'s Brazos River State 1, San Felipe, sd 500 ft. The Texas Co.'s Young 1, 9 mi s Hempstead, bldg drk.

SOUTHWEST TEXAS

Completions

BASTROP COUNTY—		
Jarmon et al, Barnett 1, Cedar Creek	*	1614
CALDWELL COUNTY—		
The Texas Co., Branyon 1-B	32	2355
GONZALES COUNTY—		
The Texas Co., Lamkin 1	*	435
NUECES COUNTY—		
Aqua Dulce Gas Co., Sander 1, Aqua Dulce	¶30	1978
ZAPATA COUNTY—		
Chas. McGaslin, R. Cuellar 1	*	1785

BASTROP COUNTY—Sun Oil Co.'s Yost 1, Cedar Creek, plugged back from 155 ft. The Texas Co.'s Yost 1, Cedar Creek, will pump. Gulf's Yost 1, Cedar Creek, td 1410 ft, moving in cable tool rig. Gypsy Prod. Co.'s Lottman 1, e of Bastrop, ru again. Jarmon et al's Barrett 1, e Cedar Creek, abn at 1614 ft. Owen's et al's White 1, 2 mi w Cedar Creek, sd 1565 ft; Goodman 1, 1½ mi Cedar Creek, sp.

CALDWELL COUNTY — The Texas Co.'s Branyon 1-B, Branyon district, completed pumping 200 bbls fluid, 80 per cent. water and 4 per cent. bs at 2355 ft. Jarmon et al's C. W. Cabiness 1, Branyon district. Shell Pet. Corp.'s Wilhms 1, Jolly district, lcn; School Land 1, 4 mi n Luling, dk. Bartlett Bros.' Martindale 2, Jolly district; sd 1602 ft. Anderson et al's J. P. Horner 1, dr 350 ft shale. S. & M. Corp.'s Lynch 1, 5 mi e Lockhart, dr 1900 ft chalk.

DUVAL COUNT—Sun's Norton 2, Schoolfield-O'Byrne field, completed for 110 bbls at 2363 ft. O. Henry Oil Co.'s Henry 1, blk 1879, Snodgrass subdiv, dr 1150 ft.

GUADALUPE COUNTY—Christie et al's Thomas 1, near Staples, bailed dry at 1053 ft. Miller Bros.' Springs 1, 5 mi s Seguin, dr 1982 ft.

GONZALES COUNTY — The Texas Co.'s Lamkin 1, abn 435 ft. Flynn et al's Wilhouser 1, 12 mi s Gonzales, dr 5012 ft lime. Cranfill & Reynolds' Webb 1, Ottine area, dr 2762 ft gbo. Empire's State 1, Ottine area, dk.

HIDALGO COUNTY—Queen City O. & G. Co.'s Amer. Land & Irrig Co. 2, 3 mi n Mercedes, sd 700 ft.

MAVERICK COUNTY—Rycade Oil Corp.'s Sullivan 3, se Eagle Pass, dr 5330 ft gbo and lime; Chittim 2, se Eagle Pass, bailed little oil; Chittim 3, se Eagle Pass, dr 1835 ft lime.

NUECES COUNTY—Aqua Dulce Oil Co.'s Sander 1, completed as 30 million gas well at 1978 ft.

STARR COUNTY—The Texas Co.'s Resendez 1, dr 3654 ft shale.

ZAPATA COUNTY—Chas. McGaslin's R. Cruellar 1, abn at 1785 ft.

WEST TEXAS

Completions

BORDEN COUNTY—		
Condor Pet. Co., Hall 1	*	3820
CULBERSON COUNTY—		
Deep Rock Oil Co. et al, Seay 2	*	1852
GARZA COUNTY—		
Emerald Oil Co., Boren 3	8	4801
NOLAN COUNTY—		
Herbert Oil Co., Pepper 1	*	3697
RUNNELS COUNTY—		
Vacuum Oil Co., Brevard 1	*	2594

ANDREWS COUNTY—Deep Rock Oil Co.'s Hostetter 1, elev 3224 ft, top salt 1890 ft, dr 2005 ft. Mid-Continent Pet. Corp.'s Fisher 1, lcn.

BORDEN COUNTY—Greene O. & R. Co.'s Slaughter 1, sp.

BREWSTER COUNTY—Ed. W. Bateman & Co.'s Nevill 1, elev 3950 ft, dr 1350 ft. Brewster Oil Co.'s Fee 1, sp and sd. C. Williams et al's Poncey 1, sd 500 ft.

COKE COUNTY—Gates & Dennis' Mims 1, sd 1465 ft. Lipan Oil Co.'s Rawlings 1, sd 2840 ft. Louisiana Oil Ref. Corp.'s Powers 1, elev 2040 ft, dr 3590 ft. Mid-Kansas O. & G. Co.'s Lackey 1, cem cas 3033 ft.

CONCHO COUNTY—Lloyd Jones et al's Jones 1, sd 660 ft. Exploration Co.'s Hartgrove 2, rig. J. L. Duffey-Loofbourrow et al's Hill 1, dr 1190 ft. J. L. Duffey-Clark & McGee's Lovelace-Lockett 1, sd 660 ft; Noyes 1, trace of oil 1240 ft, dr 1330 ft.

CRANE COUNTY—C. C. Duffey et al's Cowden 4, elev 2584 ft, top salt 710 ft, dr 1620 ft. Gulf Prod. Co.'s Waddell 6, dr 875 ft.

CROCKETT COUNTY—Barbara Oil Co.'s Cox 1, elev 2051 ft, top lime 1802 ft, sd 1290 ft. W. W. Donnelly et al's Shannon 1, (Sec. 9), elev 1486 ft, comp as gasser, td 1759 ft. Donnelly-W. A. Moncrief et al's Todd 1, (Sec 35), sp and sd. Ed. G. Lewis and W. T. Daniels' Pecos River Bed 1, sp and sd. J. D. Wheeler et al's State Fee 1, sd 410 ft.

CULBERSON COUNTY—Deep Rock Oil Co. et al's Seay 2, elev 3776 ft, contract comp td 1852 ft. West Texas Oil & Exploration Co.'s McGregor 1, sd 530 ft. Hickey et al's Finley 1, ur 1680 ft.

JEFF DAVIS COUNTY—Sam F. Means et al's J. Z. Means 1, ur 5-in cas with hfw 3418 ft.

DAWSON COUNTY—Magnolia Pet. Co.'s Jeter 1, elev 2889 ft, top salt 1640 ft, top lime 3560 ft, dr hfw 4080 ft.

EDWARDS COUNTY—McMan O. & G. Co.'s Schreiner 1, sd 3895 ft.

EL PASO COUNTY—C. E. Sillix et al's Malone 1, sd 1010 ft.

FISHER COUNTY—Bickerstaff et al's McWhirter 1, elev 1932 ft, sd 2000 ft. Cranfill-Reynolds and Sun Oil Co.'s Brown 1, dr 1730 ft; Fleming 1, dr 150 ft; B. F. Willingham 2, rig. Culberson Bros. et al's A. J. Griffin 1, rig. J. B. Dunigan et al's Henry 1, sd 1475 ft. Gilman-McMurray and French's Cleveland 1, sp. Hucony Gas Co.'s Marberry 1, elev 1876 ft, top lime 2960 ft, dr 3055 ft. Landreth Prod. Corp.'s Cooper 1, dr 175 ft. Robt. Rainey et al's Marberry 2, elev 1929 ft, top lime 2995 ft, sd 3507 ft. I. E. Thompson et al's Newman 1, elev 1882 ft, dr 2750 ft. Texas Co. and Phillips Pet. Co.'s Hail 1, dk.

GAINES COUNTY—Pure Oil Co.'s Williams 1, elev 3197 ft, top salt 2333 ft, dr 2750 ft.

GARZA COUNTY—Emerald Oil Co.'s J. M. Boren 4, sp.

GLASSCOCK COUNTY—Fred L. Kyle and Chas. Daniels' Meek 1, elev 2792 ft, dk. Gibson-Johnson et al's Mann 1, elev 2703 ft, top salt 1170 ft, dr 1580 ft. Merriwether Oil Co.'s McDowell 2, elev 2517 ft, top salt 970 ft, top lime 2445 ft, sd hfw (sulphur) 2665-90 ft. Bob Penn et al's Hughes 1, elev 2733 ft, dr 915 ft. White Eagle O. & R. Co.'s Dunbar 1, elev 2705 ft, top salt 1140 ft, sd 2210 ft. World Oil Co.'s McDowell 1-C, elev 2530 ft, sd 405 ft. McElreath-Suggett et al's Underwood 1, lcn.

TOM GREEN COUNTY—F. P. Green et al's Fee 1, sd 1810 ft.

HOWARD COUNTY—W. B. Andrews et al's Neal 1, elev 2731 ft, top salt 2015 ft, top lime 3150 ft, dr 3980 ft. Greene O. & G. Co.'s Furrh 1, elev 2277 ft, top salt 1255 ft, top lime 2097 ft, sd 3503 ft. L. C. Harrison et al's Dodge 1, elev 2321 ft, top lime 1830 ft, pb from 3257 to 3000 ft for shot. Phillips Pet. Co.'s Thomas 1, elev 2591 ft, top salt 1170 ft, top lime 3030 ft, dr 3805 ft.

HUDSPETH COUNTY — The California Co.'s University 1, elev 5833 ft, bad hole 305 ft. Western States Oil Co.'s Gardner-Mosely 1, elev 5086 ft, sd 3155 ft; Moore 1, elev 5150 ft, sd 2760 ft.

IRION COUNTY — Furhman Pet. Corp.'s Sugg 1, lse 3, rig. Kimbrough et al's Nutt 1, elev 2299 ft, sd 1420 ft. Kimbrough & Flinchbaugh's Tankersley 1, elev 2241 ft, sp and sd. Kingwood Oil Co.'s Sugg 1, elev 2334 ft, dr lime 5355 ft. Western Oil Co.'s H. Horney 1, dr 355 ft. Signal Oil Co.'s Sugg 2, dr 335 ft. Sun Oil Co.'s Tankersley 1, sp. Webb et al's Nutt 1, elev 2351 ft, sd 2510 ft.

JONES COUNTY—Culberson Bros. et al's Mrs. H. H. Anderson 1, lcn. E. P. Campbell & Co.'s Herndon 2, dr 1780 ft. McClanahan et al's Hall 1, rig. McGinley Corp.'s Whittemore 1, rig. McNeeley et al's Bland 1, sp and sd. Mid-Sun Oil Corp.'s Hoehn 1, dr 2270 ft. Milt Richardson et al's Martin 1, dr 1149 ft. Roeser-Pendleton et al's Castle 1, dr 980 ft. Sedgwick O. & G. Co.'s Brown 1, lcn; Routh 1, rig. Tomberlin et al's Horn 1, sp and sd.

KING COUNTY—Huff Oil Co.'s M. A. Martin 1, rig.

LOVING COUNTY—Lockhart & Co.'s W. S. Hazell 1, dk; H. L. Lepp 1, lcn; R. F. Peden 1, dr 480 ft; I. I. Wheat 1-A, elev 2697 ft, top salt 715 ft, dr 2150 ft.

LYNN COUNTY—Hart Oil Corp. and Geo. B. McCamey's Edwards 1, elev 3128 ft, dr red rock 745 ft. H. F. Miller et al's W. H. May 1, sp and sd.

MENARD COUNTY—Carl G. Cromwell & Sorrells & Jackson's Wilhelm 1, elev 2245 ft, set 10-in cas 1500 ft.

MIDLAND COUNTY—Shoup et al's Parks 1, elev 2871 ft, top salt 1740 ft, sd 4080 ft.

MITCHELL COUNTY—E. P. Campbell & Co.'s Pond 1, elev 2119 ft, top lime 1385 ft, dr 2960 ft. Clonton & Hammon's McKenzie 1, dk. Simms Oil Co.'s Fllwood 1, sp. Teas & Wheeler's Radford 1, elev 2223 ft, top salt 667 ft, top lime 1365 ft, dr 3535 ft.

NOLAN COUNTY—T. G. Bradstreet et al's Kuteman 1, dk. C. M. Root Drlg. Co.'s Simpson 1, swedg cas 2330 ft. White Eagle O. & R. Co.'s Allyn 1, elev 2158 ft, ur cas 2615 ft.

PECOS COUNTY—Alexander-Lyles et al's Sellman 1, elev 2672 ft, top salt 814 ft, top lime 1602 ft, sd hfw and show oil-gas, td 1655 ft. Geo. H. Anderson and Tower-McKanna's University 1, elev 2801 ft, top salt 1030 ft, top lime 1690 ft, plugging back from 1998 ft to make gasser at 1960-63 ft. Atlantic Oil Prod. Co.'s Sellman 1, elev 2751 ft, top salt 838 ft, dr 1610 ft. Benedum-Trees et al's Corder 1-A, elev 2713 ft, top lime 1840 ft, dr 2805 ft. M. H. Black et al's Pecos Land Co. 1, lcn. Buell-Hagan et al's University 1-B, lcn. M. Z. Dibble et al's Bonebrake 1, elev 2544 ft, top salt 1874 ft, pulled in dk, td 2004 ft. Doran & McGee's Pecos Land Co. 1, lcn. J. W. Grant et al's Turney 1, elev 2592 ft, top lime 1015 ft, sd 3965 ft. Grayburg Oil Co.'s University 1, lcn. Marland Prod. Co.'s Wm. Blakeslee 1, dk. McCarty Oil Co.'s Gray 1, dr 255 ft. Mauch & Krogen's Holmes 1, elev 2352 ft, top salt 535 ft, sd 1010 ft. Pecos Valley Oil Co.'s Fee 2, set cas 608 ft. Phillips Pet. Co.'s J. L. Nutt 2, elev 3113 ft, dr 1470 ft. Schumaker et al's Williams 1, elev 2388 ft, sd 550 ft. Southern Crude Oil Pur. Co.'s Scharbauer 1, elev 3680 ft, fsh 3380 ft. Stein & McGee's L. Peterson 1, lcn. Talbot & Dittman's Unsicker 1, sd 1203 ft. Transcontinental's University 1, elev 2552 ft, top lime 1035 and 3315 ft, dr by junk 4140 ft. Trees Oil Co.'s J. C. Trees 1, lcn. World Oil Co.'s Kloh 1, elev 2810 ft, sd 3105 ft.

PRESIDIO COUNTY—L. C. Brite Prod. Co.'s Brite 1, dr 4565 ft. Eastland Oil Co. et al's Tootle 1, sp and sd. C. E. Miller-Delmar-Phillips Pet. Co.'s Tootle 1, cavey hole 2200 ft.

REAGAN COUNTY—The California Co.'s University 5, elev 2879 ft, top salt 1280 ft, dr 1325 ft. R. V. Oberholtzer et al's Talley 1, lcn.

REEVES COUNTY—E. W. Brooks et al's Eddins 1, elev 2719 ft, top salt 1622 ft, top lime 3216 ft, sd 5658 ft. D. P. Davis et al's Kinney 1, sp and sd. Exploration Co.'s Kinney 1, elev 2847 ft, sd 2900 ft. Dr. Kitsos et al's Kloh 1, elev 2786 ft, sd 1150 ft. Bob Penn et al's Bowles 1, dr 1310 ft. Southern Crude Oil Pur. Co.'s Kloh 1, lcn. Lee O. White et al's Kloh 1, rig.

RUNNELS COUNTY—G. W. Boyce et al's Lange 1, dr 1350 ft. Gene Mays et al's Currie 1, sp and sd. Ira Nourse and Tilton et al's

Cramer 1, ur 2415 ft. Union Oil Co.'s Allen 1, dr 2515 ft.

SCHLEICHER COUNTY—Ft. McKavitt Oil Co.'s Tisdale 1, elev 2155 ft, dr 1535 ft. Interstate Prod. Co.'s Whitten 1, dk.

SCURRY COUNTY—R. B. Pender-Deickman et al's Davis 1, elev 2208 ft, top salt 445 ft, sd 1810 ft.

STERLING COUNTY — Foster-Gracey Oil Co.'s Foster 1, elev 2260 ft, ur 1775 ft. Miller Bros. et al's Foster 1, lcn.

SUTTON COUNTY—Phillips Pet. Co.'s Holman 1, elev 2247 ft, top lime 2315 ft, fsh 5770 ft. Southern Crude and Dixie Oil Co.'s Allison 1, dr 645 ft.

TAYLOR COUNTY—Burnham et al's Amyx 1, fsh 2140 ft. Grisham-Hunter Corp.'s Campbell 1, dr 345 ft. Mid-Continent Pet. Corp.'s Taylor 1, testing show oil 2380 ft. Thompson et al's Hammer 1, sd 455 ft. L. H. Wentz et al's Armour 1, rig.

TERRELL COUNTY—Milham Corp.'s Bassett 1, elev 2270 ft, sd 4580 ft. Keck-Pecos Oil Trust's Hamilton 1, elev 1733 ft, sd 1749 ft.

TERRY COUNTY—Superior Oil Prod. Co.'s Brownfield 1, elev 3205 ft, top lime 4565 ft, fsh 5080 ft.

VAL VERDE COUNTY—Dyer Bros. et al's Wilson 1, elev 2115 ft, sd 2605 ft. Producers Oil Co. et al's Everett 1, dr 1910 ft. Val Vert Oil Corp.'s Bassett 1-A, dr 2805 ft.

WARD COUNTY—Atlantic Oil Prod. Co. and Delmar Oil Co.'s Hayzlett 1, dr 510 ft. J-H-L Oil Co.'s Hayzlett 1, set cas 105 ft. Barstow O. & G. Co. (was Del Cambre's) Monroe 1, rotary rig. E. B. Lovelace et al's Redman 1, sp and sd. Prairie O. & G. Co.'s Sealy 1, elev 2666 ft, top salt 1073 ft, top lime 3110 ft, sd 3505 ft. Rector Oil Co.'s Johnson 1, elev 2438 ft, top salt 745 ft, top lime 2010 ft, sd hfw 2550 ft. Talbot-Dittman et al's Dorr 1, elev 2430 ft, top salt 745 ft, dr 2630 ft.

WINKLER COUNTY — Gulf Prod. Co.'s Scarborough 1, dr 315 ft. Prairie O. & G. Co.'s Scarborough 1, lcn. Shell Pet. Corp. and Llano Oil Co.'s Scarborough 4, dr 175 ft. Texas-Canadian Oil Co.'s Kloh 1, dk.

YOAKUM COUNTY—Bert Weekly et al's Knight 1, sp.

SOUTH LOUISIANA

ACADIA PARISH—E. F. Simms' Clement 1, Jennings, sd 3872 ft; Clement 2, Jennings, sd 3840 ft; Grace von Schueler 1, Jennings, coring sandy shale 4912 ft; Jennings Oil Co. 1, Jennings, sd 3545 ft; Cockrell 1, Jennings, sd 4330 ft; Cockrell 2, lcn.

ASCENSION PARISH—Gulf's United Lands Co. 11, Sorrento, ru; Belle Helene Sugar Co. 1, Darrow, lcn. Triumph Oil Corp.'s J. D. Lacey et al 2, 1½ mi se Sorrento, dr 1350 ft gbo. Burnside Oil Co.'s Roberts 1, dr 832 ft. Big Dome Drlg. & Dev. Co. and J. S. Kimbrough's Rearwood 1, sd 1000 ft. Baton Rouge Pet. Co.'s Liotta 1, sd 1000 ft.

CALCASIEU PARISH—Union Sulphur Co.'s Fee 729, Sulphur, abn lcn; Fee 733, Sulphur, td 6105 ft, abn after testing dry at 3505 ft; Fee 735, Sulphur, coring sand at 5250 ft; Fee 736, Sulphur, dr gbo at 3082 ft; Fee 739, Sulphur, ru; Fee 740, Sulphur, dr water sand at 4025 ft; Fee 721, dr 1721 ft rock. J. W. Watson et al's La. Land Co. 1, Sulphur, waiting on cement to set, td 5042 ft.

CAMERON PARISH—Pure Oil Co.'s Yount-Lee Oil Co. 7, Sweet Lake, setting 8¼-in cas at 456 ft over sand with oil show; Yount-Lee 8, Sweet Lake, dr 3860 ft sand and lime. The Texas Co.'s Calcasieu Lake B-4, East Hackberry, lcn; Calcasieu Lake A-3, South Calcasieu Lake dome, lcn. Seiss, Green and Sutton's Souner 1, dr 2450 ft gbo. Rycade Oil Corp.'s Yount-Lee 1, Hackberry, trying to pull screen. Yount-Lee Oil Co.'s Perkins 1, Hackberry, dr 3450 ft sand; R. Vincent 1, Hackberry, set 10-in cas at 805 ft. Noble Oil Co.'s Ellendir 3, Hackberry, coring sand at 2850 ft. Jno. D. Dickson's Duhon 1, Hackberry, ru. Cameron Oil Co.'s Benson Vincent 1, Hackberry, dr 3636 ft sticky shale; Gulf Land 3, bldg dk. Shell Pet. Corp.'s Watkins 7, Black Bayou dome, ru; Watkins 6, Black Bayou dome, dr 2716 ft sandy shale and lime.

IBERIA PARISH—La. Land & Explo. Co.'s Vermilion Bay A-3, dr 3885 ft lime. Jefferson Lake Oil Co.'s Lake Peigneur 1, Jefferson Island, dr sulphur 740 ft, top sulphur 666 ft. Gulf's La. State Z-8, Loreauville, abn at 1240 ft salt; Fannie Kling et al 3, Loreauville, dr 2945 ft sand; Moresi et al 1, Loreauville, dk.

IBERVILLE PARISH—Shell Pet. Corp.'s Wilbert 3, White Castle, set cas at 1480 ft, waiting on cement to set. Standard of La.'s Wilbert 2, Bayou Blue dome, driving piling; Wilbert 3, Bayou Blue, lcn; Schwing 1, Bayou Blue dome, dr 1775 ft gbo. Union Sulphur Co.'s Schwing 3, Bayou des Glaise, dr 3530 ft lime.

JEFF DAVIS PARISH—Vacuum's De Vilbiss 1, Roanoke, after running 3-in tubing, swabbed and flowed making little oil with 95 per cent. water.

LA FOURCHE PARISH—Gulf's Stark et al 9, Thibodeaux, ru.

PLAQUEMINE PARISH—Gulf's Morris & Rose 1, ru.

ST. LANDRY PARISH—The Texas Co.'s Botany Bay Fee 1, dr 3560 ft shale.

ST. JAMES PARISH—U. S. Mineral Dev. Co.'s Reynaul Co. 1, sd 1720 ft.

POINT COUPEE PARISH—Miller et al's Kornbacker 1, sd 1925 ft. Fruen et al's La Cour 1, ru. stdg.

ST. MARTIN PARISH—Rycade Oil Corp.'s State 3, Bayou Bouillon, moving in rig; Bayou Bouillon 6, ru; Bayou Bouillon 8, bldg dk. Atchafalaya Fee 3, Bayou Bouillon, coring sand and shale at 4475 ft; Atchafalaya Fee 5, Bayou Bouillon, dk. Ohio Oil Co.'s Martin et al 3, Hager dome, dr 4105 ft rock. Yount-Lee Oil Co.'s La. Pet. Co. 4, Anse la Butte, lcn.

ST. MARY PARISH—J. Dannenbaum et al's Le Blue 1, Charenton, sd 3015 ft.

ST. TAMMANY PARISH—Pearl Oil Corp.'s Fritsche 1, Slidell, washing to bottom, td 2020 ft.

TANGIPAHOA PARISH — Tanli Oil Co.'s Weinberger 2, sd 4050 ft. Joan Dev. Co.'s Lake Superior Piling Co. 1, dr 220 ft sand and gravel.

TERREBONNE PARISH — Southern Gas Co.'s People Sugar Co. 1, Houma, sd 2287 ft. The Texas Co.'s Lake Barre 1, Lake Barre dome, lcn; Lake Pelto B-1, Lake Pelto dome, lcn; Timbalier Bay A-1, Himbalier Bay, lcn; Bay Coon Road B-1, lcn.

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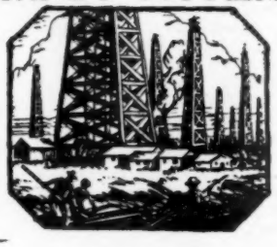

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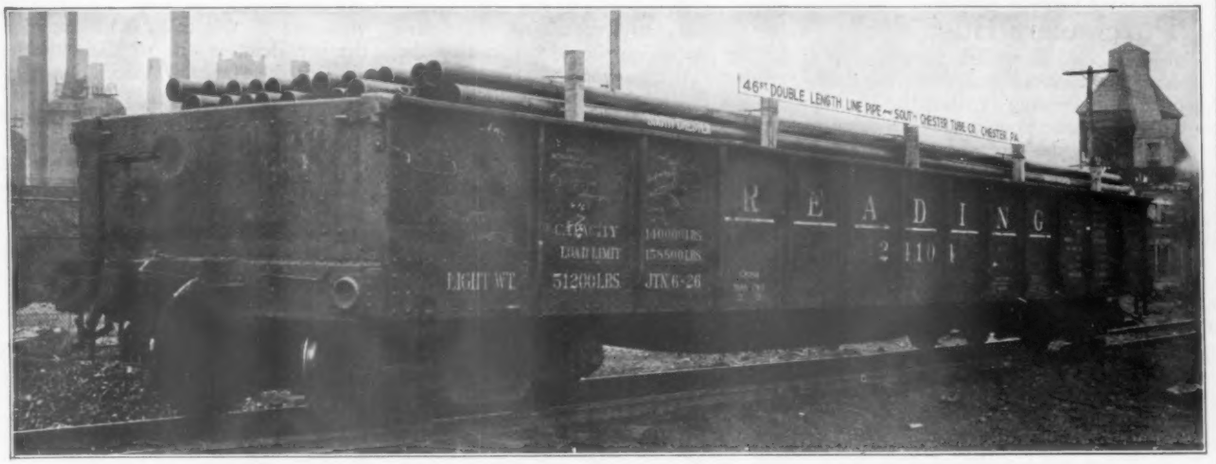

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CHESTER LINE PIPE

Golden Rule Has Place in Purchasers Business

Tulsa.—A. M. Bowman, president of the National Association of Purchasing Agents and purchasing agent of the Humble Oil & Refining Company of Houston, attended the regular meeting of the Tulsa Purchasing Agents Association here January 22, 1929. His remarks at this meeting have been summed up as follows in the Mid-Continent Purchaser:

"In speaking before a largely attended meeting of Tulsa Association, President Bowman stated his belief that the N. A. P. A. offers to its members the best medium for improving their status as buyers and consequent worth to their companies with resultant advantage to themselves. To obtain these benefits to the fullest extent members should interest themselves in both local and national affairs. The Purchaser, our national publication, is a medium through which much of the national activity is displayed and members should make it a regular practice to read it thoroughly. All of the other valuable literature coming from the national office should also be made available for the benefit of the members. All other available reading matter pertaining to the purchasing profession should be read by the members. At times some of this may seem dry and technical but it is valuable as a means of mental development. Members who are backward and timid in getting on their feet at meetings should be encouraged to speak. Many such men have valuable ideas which are lost and of no benefit to anyone because they remain unspoken. The aims and objects of our organization are constructive and helpful, the president declared. Members are thus assured of a sympathetic and not a critical audience. For this reason they should not hesitate to participate fully in all association activities.

"The Golden Rule has a place in business, according to President Bowman. Both buyer and seller are coming more and more to realize this and business is being done on a higher plane than ever before. There are still occasions when sharp practice is indulged in on both sides, but this should be discouraged. The proposed Code for Buyer and Seller offers an excellent means for developing a more fair attitude in business transactions. The vitalizing of this code, in the opinion of the president, is one of the outstanding aims of the National Association of Purchasing Agents.

"President Bowman frowns on the practice of trying to beat down prices until there is no margin of profit for the seller. This is bad business practice and ultimately will result unfavorably. The buyer is entitled to get the best price he can for his purchases, but he should not sacrifice quality in attempting to make it appear that he has made a good buy."

Flank of Hiawatha Dome Shows Gas

Casper, Wyo.—The Ohio Oil Company reports a showing of about one million cubic feet of gas in its test on the Reiter-Foster lease, Colorado side of Hiawatha dome. This is of interest to operators in southern Wyoming because the present production is evidently coming from a sand which is much deeper than that which produces the big gassers higher on the structure. The well is on Section 16-12-101 and was drilled by Ohio Oil Company and the Reiter-Foster Oil Company in the belief that possible oil production might be reached on the flank of the dome.

North Dakota Producer to be Pumped

Edgemont, S. D.—It is authentically reported here that a pump will be installed at the Red Canyon well which recently started to produce oil, and that a thorough test of the production which is coming from 2100 feet will be made. This well was drilled four years ago and left standing at the present depth. When an attempt was made to loosen the casing in order to plug and abandon the hole a shot of nitro glycerin was used. This caused the well to start flowing.

Blocking Colorado Leases

Pueblo, Colo.—A large amount of lease blocking is keeping the local interest in the discovery in the Pueblo field at a high pitch and it is announced that at least 11 wells will be drilled on the Vineland structure within the year. At a recent test of the discovery, brought in by the Rosella Oil Company, 60 bailers did not lower the oil standing in the hole, according to scouts who attended the test.

Salt Lake City, Utah.—The Moab Times-Independent says that the Western Crude Oil Company will drill a test on Section 9-20-23, about 10 miles north of the town of Cisco in the vicinity of Cisco Springs. W. H. H. Cranmer of Salt Lake City will have charge of the operations which will be started as soon as the weather is favorable.

Reiter-Foster Moves

Tulsa.—Reiter-Foster Oil Corporation will shortly move its offices from the Mid-Continent Building, Tulsa, to the Exchange National Bank Building.

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15,000′—5-3/16″ Casing	50,000′—2″ Line Pipe
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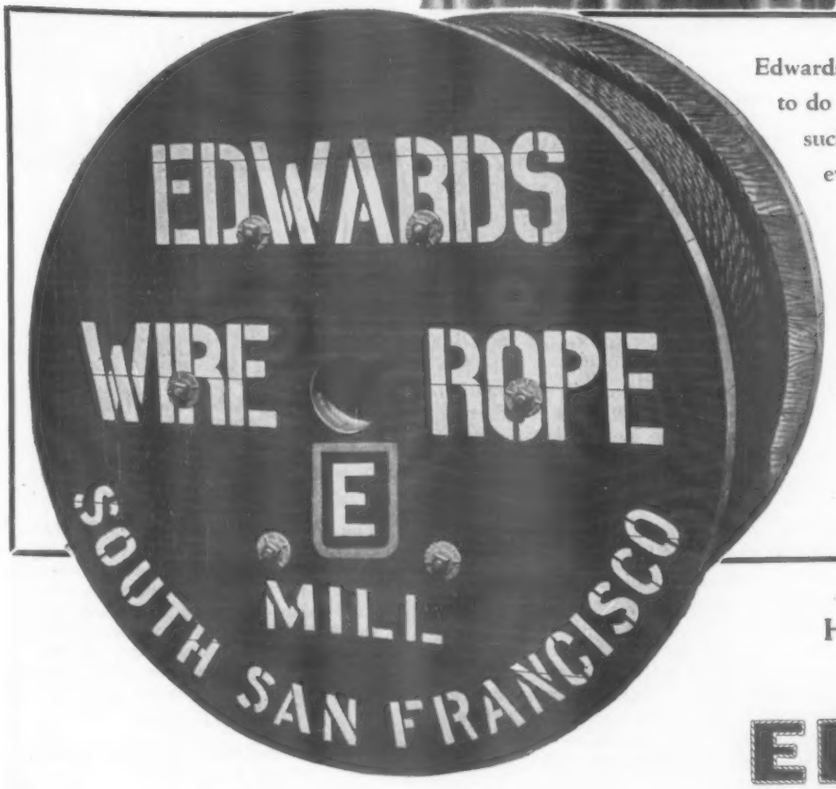

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McLain No. 19, Spindletop. Drilled to 4718 feet; 33 APPLEMAN GUMBO BITS (stillated); average of 143 feet per bit; fuel cost per drilled foot 15c.

Oakwood No. 13, Spindletop. Drilled to 4753 feet; 22 APPLEMAN GUMBO BITS used in drilling the deeper part of the hole—from 2595 feet to 4753 feet. Even taking an average from the deep part of the hole, the bits average 98 feet each at a cost of 12 cents per foot.

"Make More Money from Fast Drilling"

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B.K.APPLEMAN

BEAUMONT, TEXAS

Internal Affairs Cramping Balkan Operations

(Continued from page 26)

755 being drilled, 908 shut down and 848 abandoned. Aside from these figures there were 2130 hand dug wells of which 311 were productive. Production was 24,657,544 barrels and the cost per foot drilled was $22.00. Up until the advent of the air and gas lift the per well production average shows that Roumania production was practically twice that of the United States. Where individual wells in the United States averaged 22 barrels those of Roumania ran over 37.

Surface Indications

Geologically speaking, surface indications of petroleum usually occur as seepages. At the Buzeu field this seepage was first noticeable with the activity of neighboring mud volcanoes or boiling "mud springs." At Prahova the outcrop was in the shape of springs associated with salt cores. In all districts being drilled the oil bearing strata is chiefly in the form of sands and marls. In some places these attain a thickness of close to 2000 feet and are interbedded with hard sandstones of the Miocene age.

The formation of the Carpathian Mountains is attributed to an upward mountain making movement. This upward thrust resulted in the folding of sediments at the foot of the mountains, which are parallel to the main axis of the mountain themselves. As is indicated on the map the oilfields are located on the northeastern or southern slopes of the Carpathians, in what are termed sharply folded or faulted anticlines. This folding is plain to see and irregular with the older rocks often enclosed by the younger formations. Individual field structures show a dip away from the main range. The structure is heavily faulted and is a steep anticline with frequent intrusions of rock salt.

Two factors are responsible for any reported drop in the rate of increase of production in Roumania during 1927 and 1928. In the first place, many unfavorable conditions have been brought about by the general Roumanian economic crisis. Violent fluctuations in the external valuation of currency have thrown wages and other internal costs all out of proportion to normal development rates. At the same time the operators have been facing this unsettled condition from within, they had to face a tremendous drop in the market price of petroleum products in general. In other words, the Roumanian economic situation, plus the world oil crisis, is responsible for any decrease, rather than a lack of productivity of the oil fields themselves.

Government Changes Will Help

The internal situation will be greatly helped if numerous government changes proposed in the spring of 1928 go into effect. Usurious interest rates on borrowed capital will be hit hard. Mining authorities will revise existing regulations for handling deep wells, many of which require wasteful and excessive expenditures in the way of casing and tubing at present. Further, if the anticipated foreign loan becomes a reality, there will be a definite stabilization of currency. If these various changes are worked out to completion it will give the Roumanian operators a chance to compete on the world market and show a gain rather than a loss. At present it costs the Romano Americana more to produce and lay petroleum down in the port of Constantza than they can realize for it in the world market. No wonder then that drilling has fallen off and production is being curbed rather than increased. For the maintenance of normal production, it would have been necessary to drill 302 wells in 1927 but only 194 permits to drill were issued. The crude production for the past four years with the proportionate increase from year to year is shown.

Year	Amount of crude prod. Barrels	Percentage increase over previous years
1924	13,884,773	22
1925	17,373,780	25
1926	24,309,967	40
1927	27,456,412	13

One thing is very noticeable in recent development work which is doing something to offset high drilling costs. A much higher production is being obtained per well and per foot of boring. While the drilling costs have mounted with the increased depths and the harder formations, there is a gratifying raise in the production chart.

Year	Crude Production Barrels	Feet Drilled	Production per foot in Bbls.
1924	13,884,772	542,542	82
1925	17,373,780	664,323	85
1926	24,309,967	871,000	90
1927	27,455,412	763,750	116

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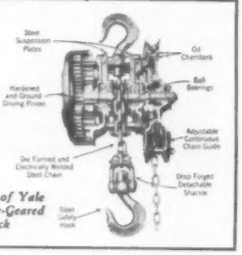

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The Spur-Geared block operates on the familiar mechanical principle of the planetary gear system. The spur-gears revolve planet fashion around a central pinion, and transfer the motion of the pinion to the load sheave which carries the hoisting chain. This type of gearing multiplies enormously the efforts of the operator and enables him to lift heavy loads with ease.

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Royalty Division Formed By Home-Stake Oil Co.

Tulsa.—Home-Stake Royalty Company has been organized by Home-Stake Oil & Gas Company stockholders for the purpose of acquiring producing and non-producing royalties in the Mid-Continent fields. The capitalization of the Home-Stake Royalty will be $1,000,000.

Officers of the Home-Stake Royalty and also Home-Stake Oil & Gas Company are: J. R. Simpson, president; J. C. Greer, vice-president, and F. B. Carden, secretary. These men together with J. E. Lester and W. F. Drese will form the directors board of the royalty company.

Home-Stake Oil & Gas Company was organized in 1917 by the late O. D. Strother. It has been highly successful. It has been able to show a return of $1,923,000 from a capital of $100,000. It owns in the Seminole, Allen and St. Louis fields 2200 acres of producing royalties on which 104 producing wells have been completed and seven wells are drilling at present. Only 18 dry holes have been drilled on its holdings. In addition it has 75 undeveloped royalty interests, totaling more than 5500 acres scattered through Pottawatomie, Seminole, Pawnee, Okfuskee and other counties.

New Refinery Will Run West Texas Oil

Shreveport, La.—The Burford Oil Company with headquarters here announced Saturday that its new $1,000,000 refinery which has been under construction at Pecos, Texas, for the last seven months, will be opened February 1. The refinery will run 6000 barrels daily of Winkler County crude which will be transported to Pecos through the pipe line owned jointly by the Skelly Oil Company and the Burford Oil Company. This pipe line has been in operation since last June. The refinery will have a daily gasoline production of 125,000 gallons.

The pipe still is of the newest type. In addition to the present unit the company has under construction two cracking units which will handle 4000 barrels daily of charging stock.

The latest ideas developed by refinery technique have been utilized in the Pecos refinery, officials said. Practically all the pumping will be done by electrically driven pumps. Special continuous treating systems have been installed at considerable expense adaptable for the special processing of gasoline from Winkler crude permitting the production of a product conforming strictly with United States motor gasoline specifications.

The opening of this refinery, it was stated, means the introduction of the company's gasoline which will be marketed as Crystal gasoline, into West Texas and New Mexico.

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STRUCTURE of TYPICAL AMERICAN OIL FIELDS
VOLUME I

Thirty-nine authors describe sixty typical fields in thirteen states: Arkansas, California, Indiana, Kansas, Kentucky, Louisiana, Michigan, New Mexico, Ohio, Oklahoma, Tennessee, Texas and West Virginia.

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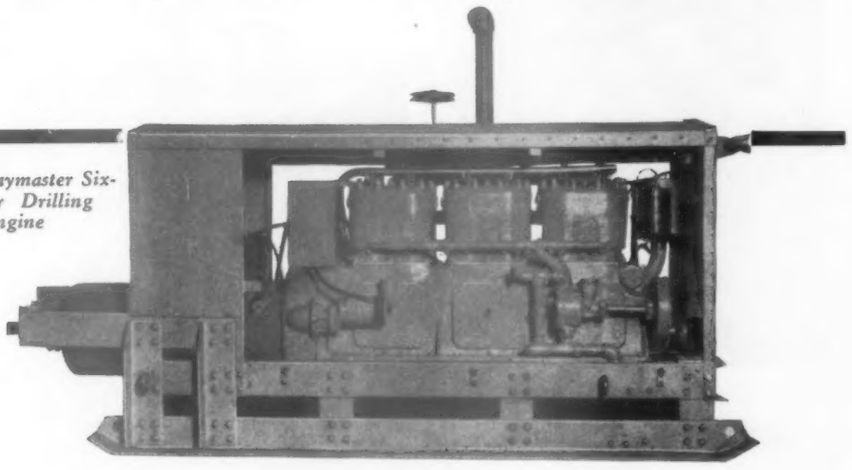

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NSCO

WITH THE MEN IN THE FIELD

THAD WYNN

Thad K. Wynn, manager of Humble Oil & Refining Company's Lake Charles, Louisiana, office, has been scouting for the land and lease department since early in 1924, just prior to the discovery of Lockport field. He joined the Humble seven years ago as roughneck on a wildcat in Jim Hogg County, Texas, saw the Corsicana boom through and then was transferred to Cotton Valley, Louisiana. Wynn's experience in oil dates back to the time Carter Oil Company had only two men in its Tulsa office. He was one of them, holding the title of office boy and general flunky. Nowadays, if it's happening in South Louisiana, Wynn knows about it. He knows his territory as well as his maps.

Dave McCrea, scout for Gulf Refining Company of Louisiana, is located at Houma after a long career in the field with this organization. Scouting has taken him along the Gulf Coast from the Mexican border to the Mississippi River. That his efficiency goes further than scouting wells is illustrated in the accompanying photograph after Dave had brought down a 10-pointer over near Laredo, Texas.

CHARLIE SHEARER AND L. W. VLOTH

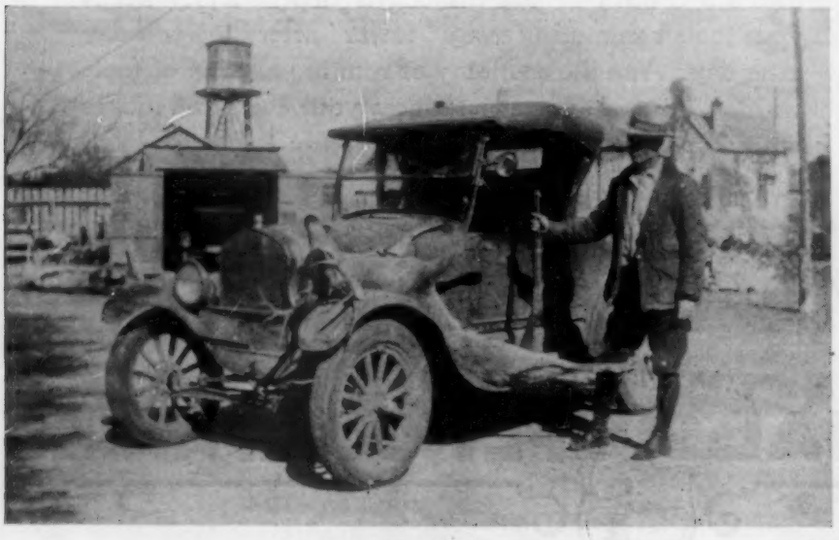
Charlie Shearer, left and L. W. "Luke" Uloth, lease men for the E. F. Simms interests. Shearer makes his headquarters at Thibodeaux, and is one of the oldest oil men, in point of service, in Southern Louisiana. "Luke" Uloth, who works out of Houston, has been in the swamps so long he is lost on a paved street. You could turn this boy loose in China and he'd come out with a lease contract.

Walle Merritt, who has been in charge of lands and leasing for Shell Petroleum Corporation in the Gulf Coast for several years, is being transferred to Los Angeles, where he wil be superintendent of the land department of Shell Union Oil Company. Preceding his departure from Houston, Merritt was the guest of a banquet given by his associates January 26 at Galveston. He is being succeeded in the Houston Territory by H. W. Penterman, who formerly served the Shell Petroleum Corporation as assistant superintendent of lands in the northern district, headquarters at Tulso.

R. C. MILSTEAD AND AL. WEGHORST

R. C. Milstead, left, who has charge of Gulf Refining Company of Louisiana's drilling crew at Chacahoula Dome, near Thibodaux, has served the Gulf eight years, working in many of the leading Coastal fields. He has been in the engineering department for six years. Al Weghorst, right, assistant to Milstead at Chacahoula, got his training in the field with the Gulf Refining Company.

A. J. Hazlett, one of the most widely known oil writers in the country and editor of the Inland Oil Index at Casper, Wyoming, is spending a few weeks in California. It is Mr. Hazlett's first trip to California.



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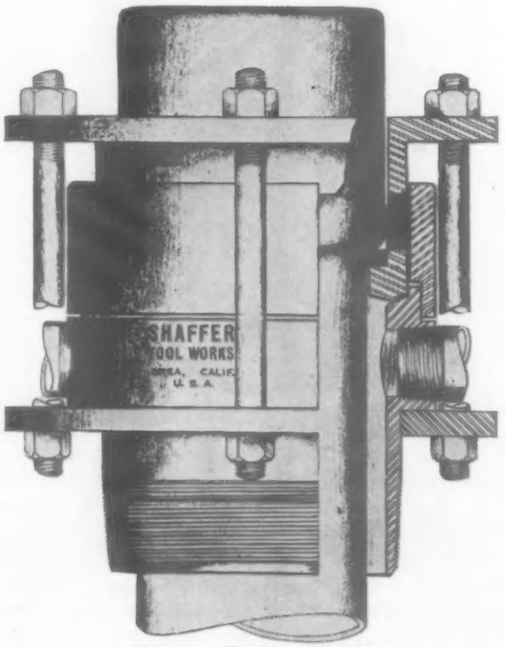
The American Hammered Piston Ring Co. Baltimore, Md.

The Perkins' Patent having expired, and Halliburton's royalty agreement thereby terminated, a new and lower schedule of cementing prices prevails

HALLIBURTON
OIL WELL CEMENTING COMPANY
DUNCAN, OKLAHOMA

Say you saw it in The OIL WEEKLY

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS



Western Packing Head

"Western Type" Packing

SHAFFER TOOL WORKS

Among recent patents issued is one covering the "Western Type" packing head, manufactured by the Shaffer Tool Works at Brea, California.

The new design was developed to handle the extremely long strings of heavy casing which modern drilling methods have made possible, according to Shaffer officials. It is now common practice to land strings of casing weighing twice as much as was customary a few years ago, it is pointed out, and certainly much more than conventional types of casing heads are designed to accommodate.

One of the difficulties of landing heavy strings had been the tendency to "bottle-neck" the casing, or reduce the internal diameter where the weight of the casing is used to compress the packing. The "Western" head avoids this by suspending the coupling on steel rings, a detachable "stuffing-box" carrying the packing, which is compressed around the collar instead of the casing itself.

More information may be had by addressing the company.

Pittsburgh—Andrew Wells Robertson of Pittsburgh, president of the Philadelphia Company, was elected chairman of the board of directors of the Westinghouse Electric and Manufacturing Company in a meeting of that board, held in its offices at 150 Broadway, New York City, January 16. Mr. Robertson will withdraw from his other business activities and devote his entire time to the Westinghouse company. For the present his headquarters will be in Pittsburgh.

Henry Bedinger Rust, president of the Koppers Company, and an official and director of many other companies, was elected a director of the Westinghouse Electric and Manufacturing Company at the same meeting. Mr. Rust will continue to serve as head of the Koppers Company.

Since the death of Guy E. Tripp, in 1927, the chairmanship of the board has been temporarily held by Paul D. Cravath, general counsel of the Westinghouse Company. Mr. Cravath will continue in the capacity of general counsel.

Strong Rotary Chain

HOWE CHAIN COMPANY

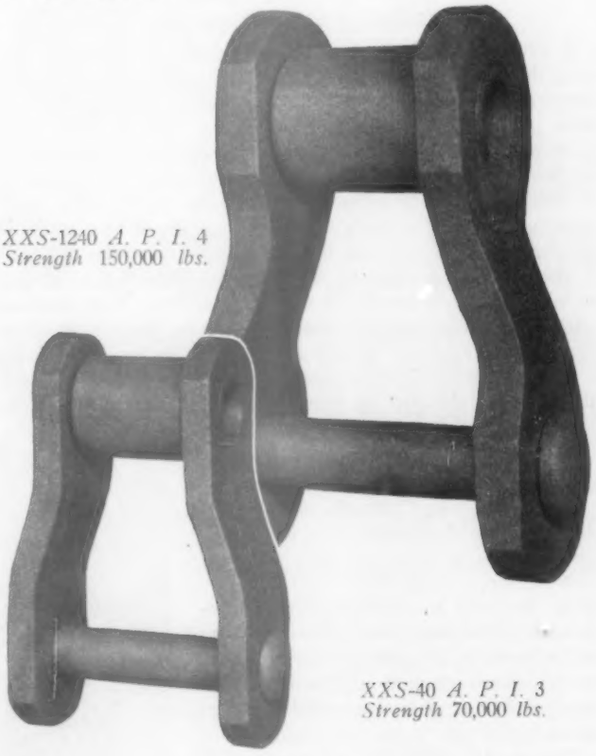
A recent chain development is the announcement of two new rotary chains by Howe Chain Company, of Muskegon, Michigan. These new chains, known as "XXS" Class (signifying double excess), are designated as the XXS-1240 and the XXS-40, with respective strengths of 150,000 and 70,000 pounds.

The chains are of the same dimensions and will run on the same wheels as the corresponding sizes of "XS" Class. All parts are Chrome nickel steel (heat treated), even the cotter pins. This alloy assures greatest strength and wear values.

The bushings and pins in these chains are press fitted into the side bars. The press fits increase durability and prevent wracking of parts.

Rollers are made from solid bar and heat treated. These chains have been thoroughly tested in the field, and will be for sale by the Howe Chain Company, and by the Republic Supply Company, either of which will be glad to give further information upon request.

XXS-1240 *A. P. I.* 4
Strength 150,000 *lbs.*



XXS-40 *A. P. I.* 3
Strength 70,000 *lbs.*

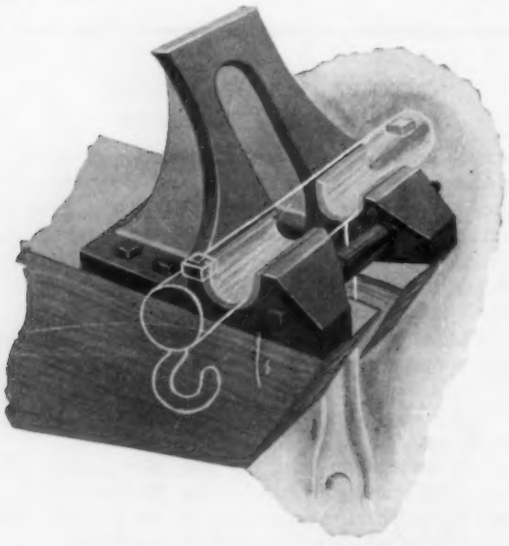
Baker Broadcast

The eleventh issue of Baker Broadcast, a booklet published by the Baker Casing Shoe Company, Los Angeles, is devoted to the reprinting of a paper on "Landing and Cementing Long Water Strings," by J. B. Case, chief deputy supervisor, Department of Petroleum and Gas, State of California.

The paper covers particularly the situation of setting and cementing in deep wells on the Pacific Coast, where the writer has had extensive experience with deep well problems.

Baker Casing Shoe Company has given this paper wide distribution through mailing copies of issue No. 11 of Baker Broadcast to a long list of companies and individuals interested in the producing branch of the industry. Baker Broad-

cast, which commonly carries about 40 pages, is used by the company to keep its producer friends acquainted with the latest drilling problems in different phases.



Burns Beam Bearing

BURNS TOOL COMPANY

A new product known as the Burns beam bearing for use with the Burns temper screw has been perfected and now is being manufactured and sold by the Burns Tool Company at their plant at Okmulgee, Oklahoma.

This new product saves the beam through the elimination of all wear and makes unnecessary the practice of half-soling, or nailing a block of hardwood to the beam head. As a safety first feature it is virtually impossible for the temper screw to accidentally jump off with the beam bearing properly installed.

There are no working parts to get out of order and is built to withstand field service of the roughest sort. It is equipped with babbitt bearings that prevent wear on the temper screw head. It is made to fit standard as well as machine beams.

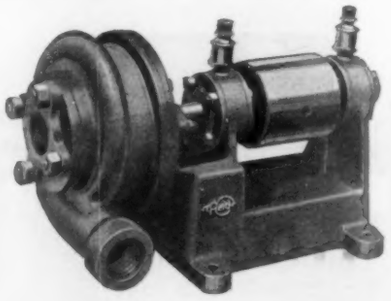
It is sold through all supply companies, or further information may be obtained by communicating.

New Drilling Bit

Inset shows H. C. Smith, president of H. C. Smith Manufacturing Company, showing Merle Boles, general field superintendent of the Wilshire Oil Company, the new H. C. Smith Type B demountable drilling bit. The Wilshire Oil Company brought in the Buckbee 1, the discovery well of the deep sand production of the Santa Fe Springs field.

The bit is of two piece construction, the bit body and the bit. The wide flat winged section of the bit body above the bit serves to steady the bit in the hole. The four way construction of bit blades lessens strain exerted on the drill pipe and the serrated bit blades allow easier penetration of either hard or soft formations. All H. C. Smith drilling bits are heavily hardset with a diamond substitute metal and then hard faced.

The development of such new tools as pictured above has been a factor in the growth of the H. C. Smith Manufacturing Company. This bit has enjoyed instantaneous success in the California Rental Service maintained by this company. Over 150 oil companies are now using H. C. Smith tools in the drilling, coring and underreaming of their wells.



Centrifugal Water Pump

JOSEPH REID GAS ENGINE COMPANY

Joseph Reid Gas Engine Company, Oil City, Pennsylvania, is now distributing its Type JP-2 centrifugal water pump, equipped with Timken tapered roller bearings, used in circulating water through the water jacket of the engine cylinder. Equipped with bearings, the pump is designed to give longer service and reduce lubrication costs.

Construction of this pump, having a solid base which has the two shaft bearing housings cast integral, designed to have a very rigid support for the pump shaft and bearings.

The gland through the shaft passes is provided with a brass seal, to which the water is applied, preventing air, which lessens the suction, from being drawn into the pump through the gland. Two-inch pipe is used for the inlet and outlet.

This pump is not intended to be used as either a suction or a pressure pump. It should be set as to allow the water to run into it, and the highest point of the discharge pipe should not be more than five feet above the water level in the tank. It must be placed in the line in position to take the water from the tank and deliver it to the engine and through the engine water jacket back into the tank.

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No thinning of outside wall or buckling of inside wall. Greater strength, less friction, longer life.

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Used to provide any kind of elbow, off-set, branch, or return bend in welded piping. To replace cast fittings and mitre-welded elbows, or wherever a tight, flexible, safe, SEAMLESS drawn fitting of low friction resistance will improve the installation.

Immediate delivery of standard sizes from either our own warehouse, or from stocks at Louisville, Ky. Price lists and descriptive bulletins mailed on request.

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a Positive Road to Greater Profits in 1929

No Promise No Gamble . . but a guarantee

While we *guarantee* the NO-CO-RO Drop and Seat to outlast and out-perform any two balls and seats you have ever used, actual records indicate a much higher savings.

Thus, one superintendent used the Drop and Seat *six months* without replacement in a group of wells that formerly required twenty-four balls and seats a month; another installed them in January and during July reported that they were still working properly; still another received eight months' service in a well that required *weekly* replacement before.

It stands to reason, therefore, that regardless of general conditions you assure yourself of *greater profits* in 1929 by adopting this revolutionary improvement in valve check design. Your order, sent to anyone of the addresses given below will receive prompt and careful attention.

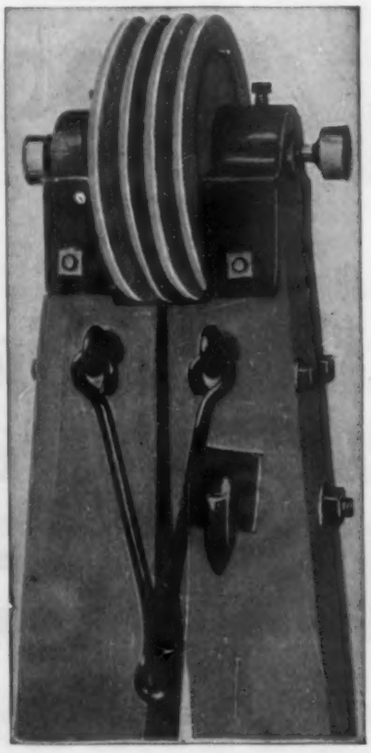
NORRIS BROTHERS, Inc.

Robinson, Ill. Ft. Worth, Texas

Owensboro, Ky.

SAFETY PULLING MACHINE COMPANY

Wishes to announce that the Safety and Eclipse special Pulling Machines (7x10x36 ft. A-Mast) size will be equipped with Double Crown Pulleys, fitted with 2-15/16 Phosfer Bronze Bushings.



The price to remain the same. Safety $375.00. Eclipse $350.00. F. O. B. Factory.

Either the complete Machine or the Stripped Derrick equipped as above.

For complete description write

SAFETY PULLING MACHINE COMPANY

INDEPENDENCE, KANSAS

P. O. BOX 525

SQUEAKS FROM THE BULL WHEEL

Maize—Is your boy friend a one-arm driver?

Mamie—Not him. He takes a taxi and uses both arms.

Muriel had been to the zoo, for a long time, and was giving her grandmother a long account of what she had seen.

"And which animal did you like best, dear?" asked her grandmother when Muriel had finished.

"Oh, the elephant," was the reply. "It was wonderful to see him pick up peanuts with his vacuum cleaner."

Teacher—Give an example of how circumstances alter cases.

Pupil—Well, Milwaukee isn't famous now.

Hedda—Why do you wear spats?

Lucien—In memory of my first wife.

The street railway had a vacancy in its stenographic department, and as all progressive firms nowadays have a personnel department where applicants must give everything from the color of their grandmother's eyelashes to the indebtedness of their third cousin on their father's side, one young lady made out her application in the following manner:

Calf: Fourteen inches.

Thigh: Twenty-six inches.

Neck: Positively.

A few minutes after an alarm of fire was given in a hotel, one of the guests joined the group who were watching the fire, and chaffed them on their apparent excitement. "There was nothing to be excited about," he said. "I took my time about dressing, lighted a cigarette, didn't like the knot in my necktie, so tied it over again—that's how cool I was."

"Fine," one of his friends remarked, "but why didn't you put on your trousers?"

Judge: "Speeding, eh? How many times have you been before me?"

Speeder: "Never, your Honor. I've tried to pass you on the road once or twice, but my bus will do only 55."

A man who had been asked to make his after-dinner speech as short as possible, arose, and said:

"I am asked to propose the toast of Mr. Dodshon, and I have been told that the less said about him the better."

"That fellow sure made me sore. He said I was a regular Venus."

"You shouldn't get sore at that. That's a mighty fine compliment."

"Say, you must think I don't know Venus is a city in Italy with all the sewers stopped up."

"If I buy this car, what will I do with my old one?"

"That's easy, just send your boy to college."

Charlie—So you married your employer! How long did you work for him?

Myrtle—Till I got him.

A man was amusing himself by trying all the penny-in-the-slot machines at a fair.

"Look here," he said to the owner of a nearby booth, pointing to the line of machines, "that one is to try your weight, the next your height, that one your strength, the next your sight, the one over there your lungs, and now I've got a penny in this thing, but I don't see what it's for."

"That, gov-nor?" replied the booth owner. "Oh, that one's to try your temper."

Jones (who had called around to see if his friend had recovered from a wild night)—Is Mr. Wizzy up?

Landlady (sternly)—Yes, he got up, drank his bath and went back to bed.

"Daddy, what is dew?" asked Bobby.

"The rent, the note at the bank, and the installment on my car," growled his dad.

"Sir!" I'll have you understand that I have blue blood in my veins."

"I hope you're taking something for it."

Is May a good girl?

Yes, indeed! After the wedding she forgot she was married and slapped her husband when he tried to kiss her.

Bobby (reading aloud)—"John appeared presently in immaculate evening dress." What does immaculate mean?

Eight-year-old Sister—No gravy spots on it.

"See that picture over there? Well, I painted it and a million wouldn't buy it."

"Well, I'm one of the million."

He—Let's kiss and make up.

She—If you'll be very careful I won't need to.

"Ouch! That wasn't the tooth I wanted pulled."

"Never mind," said the dentist, "I'm coming to it."

Mr. Goofus: "I see by the papers that the chain stores are selling more than ever before."

Mrs. Goofus: "I don't see what people want to buy so many chains for, do you?"

"Do you get these worms in pairs?"

"No, they come in apples."

Isaac—You should pull the curtains down ven you kiss your wife. I saw you last night.

Abie—The choke's on you. I wasn't home last night.

Visitor: "It is not often that I get such a good dinner."

Little Joe: "Neither do we, Mr. Jones."

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Refiners of PETROLEUM

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NAPHTHA
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